UNDERSTANDING CORPORATE VALUE: MANAGING AND REPORTING INTELLECTUAL CAPITAL IN INDIAN COMPANIES

ABSTRACT
THESIS

SUBMITTED FOR THE AWARD OF THE DEGREE OF

Ph.D. (Business Administration)

BY

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Abstract

Introduction

Evolution is the basic principle of life and as things evolve they become better and improvised over the previous levels. Human life has undergone a number of changes including changes in the way goods are produced, consumed, stored and managed. As goods have evolved in their constituents, presentations and purposes so have the processes of conducting businesses.

In the past century human society has undergone significant transformations starting from being an agrarian rural society to industrialized urban society. In the past two decades however the advent has been even more rapid and has resulted in emergence of assets which are created not as physical things but are more in the form of intangibles. These intangible assets are in the form of synergies and creativities that emerge from systems and processes of the firm. These processes and activities are the real reasons for creation of better quality physical assets which actually improve the quality of life. Hence we can say that the intangible assets of the firm are the real assets which create value for the firm rather than only physical assets.

A study by Stewart demonstrated below shows how the top 500 companies had a standing in various knowledge capacities, hence emphasizing the increasing significance of knowledge as an asset.

Rank	Rank (*F 500*)	Name	Knowledge capacity (million US$)
1	8	General Electric	254,381
2	138	Pfizer	219,202
3	201	Microsoft	204,515
4	34	Philips Morris	188,538
5	1	Exxon Mobil	176,409
6	110	Intel	173,984
7	49	SBC Communications	155,402
8	19	Intl Business Machines	148,679
9	32	Verizon	141,471

		Communications	
10 Source: Stewart (2001)	88	Merck	139,494

Understanding creation of Value

The intangible assets which help create better products are far more valuable than the actual products that they produce. Hence the monetary benefit that is derived by selling a better product at a higher price is just one myopic way of assessing value of these intangible assets of the firm. While calculating the value of these intangible sources that create the new products it must be understood that their value is multiple times than the actual improved product it produces because it is capable of creating so many more.

Firms which are able to keep pace with change and continuously produce better and evolved products are definitely doing something differently. We may also say that such firms are now more evolved to be able to create something which is better than before hence contributing to knowledge. Such firms are termed as intelligent enterprises.

Intelligent enterprises managing knowledge

Intelligent enterprises are those which produce better quality products and thus gain more respect and earn more money. They are thus more competitive and have an edge over the rest. This edge is not in the form of physical asset base or size that the firm gains over time but it is the intangible asset base that the firm has evolved over time. These intangible assets may be viewed as the knowledge or the intellect of the firm. Thus firm's intellect or its Intellectual Capital can enhance the market competitive advantage by governing knowledge, organizational technique, professional skill, customer relationship and experience. The sustainable profit for modern company is based on how to establish the knowledge and then transform the knowledge into capitalization.

This knowledge is accumulated by using skills, technology and expertise and repeated use of processes created once internally. The manifestation of knowledge is sometimes visible in the form of copyrights, patents, licences etc but it is much more

magnanimous than only in these forms, precisely because it also comprises human resource, customer relationship and built-in systems.

Hence to be intelligent firms must know how to manage knowledge or information both of which are intangible and cover most of Intellectual Capital.

Enterprise Knowledge leading to Intellectual Capital

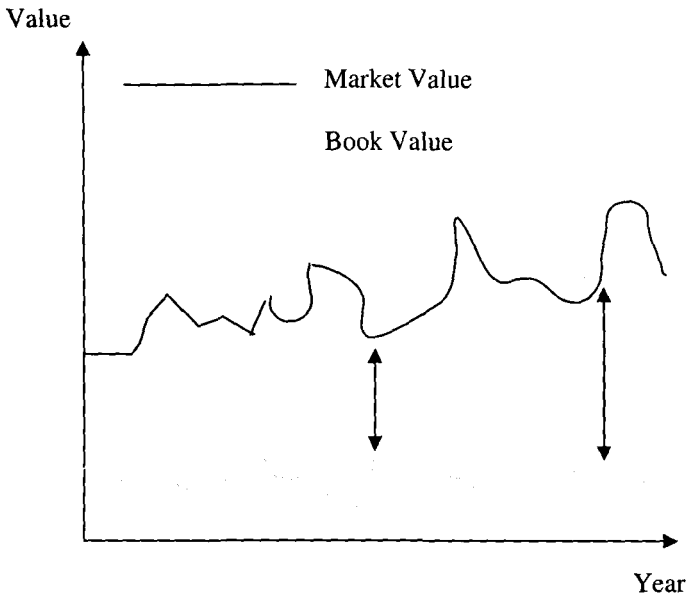
Knowledge is created in the firm but its complete worth is only when it is applied completely and constantly built. Thus Knowledge needs to be created and managed and created again. This process needs an inherent capacity to continuously create knowledge. This may not be only the intelligent human resource it may rather include a congenial climate and knowledge generating culture of an enterprise. Thus a more comprehensive term would better explain the intangible assets that actually create knowledge and give the final sustenance and competitive edge. ***On these lines Intellectual Capital has been defined and discussed as a mix of everything that the firm creates while performing its activities which lead to creation of better value to all its stakeholders and also creates value for itself in terms of wealth.***

Most of the researchers agree that Intellectual Capital cannot be seen or measured in monetary terms, and it is an abstract value that the firm creates for itself from within itself, which helps it gain an edge over others. For better understanding of this all pervasive concept of Intellectual Capital it has been classified in three main constituents – ***Human capital, structural capital and external or customer capital.*** This research has discussed Intellectual Capital using these three components for a more accurate interpretation of this capital within the firm. The aim of this research is to attribute the real value possessed by a firm to its Intellectual Capital

Understanding the value of a firm using Intellectual Capital

Till date value of a firm is calculated using two types of figures – one which appears as the book value of its share as they appear in the final accounts published in the form of annual reports and the other which the market gives to the firm in terms of market value of its share. Both these values have enormous difference in their figures and also have separate significances.

Though market efficiency postulates that the market value of the share is a representation of all information that is available publicly about the firm, the question is how does one account for the big difference in the book value of the share and the market value of the share. There is no specific technique which can help anyone judge the reason for the immense difference in the book value and market value of a firm. But till date the justifications have been attributed towards goodwill and reputation. There have been attempts to give a value to a brand or reputation but this is more often used when there are structural and strategic changes to be considered for the firm like mergers and acquisitions.

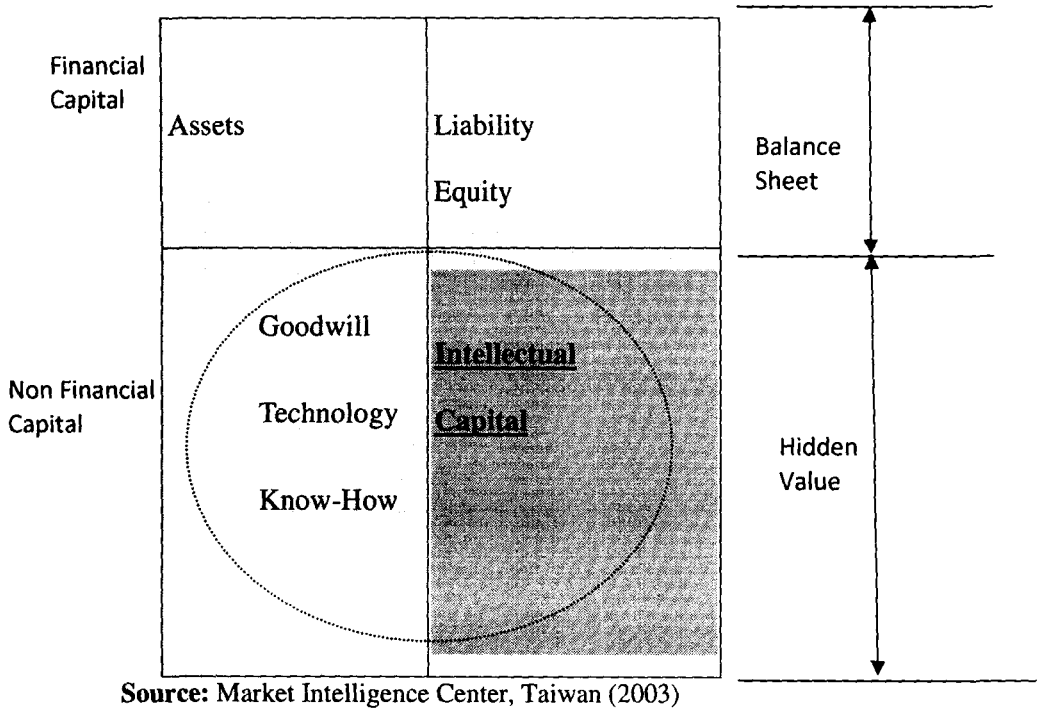


Source: Market Intelligence Center, Taiwan (2003)

Past attempts like the one exhibited above conducted by Market Intelligence Centre at Taiwan aimed at gaining a better understanding of the reason for difference in the book value and market value of a share have been one time activities, thus following a piecemeal approach. A comprehensive analysis of real value created and delivered by the firm has yet to have been given a detailed thought. The genesis of Knowledge Management and Intellectual Capital as a field of study are the real steps that have been taken to delve deep into what goes into the actual creation of value by the firm and within a firm which makes it outlast the rest in competition and comparison.

Most or rather all firms have realized that they need to create value to survive and sustain in the competitive world. This sustenance does not come by producing what others do and joining the already fierce competition, but this comes by staying ahead of the competition by producing something better than what everyone else is already producing. This capability and capacity does not come by doing the usual things in the usual ways. Hence there is a need for doing better things in better ways or in other words creating something new and better. This leads to the usage of the term innovation.

Innovativeness is closely related to creativity and both cannot be measured or given a numerical figure as a value. But only these are the assets which give the competitive edge to the firm which leads to higher profits and sustainable returns. Hence these assets needed to at least identified, defined, delineated and managed if not accurately measured.



Source: Market Intelligence Center, Taiwan (2003)

This research is directed at identifying the assets within a firm which create value by using creative and innovative processes. For treating them under a single comprehensive heading the term Intellectual Capital is being used to represent and understand all the elements that create value for the firm.

For this research the term Intellectual Capital will include elements of Human Capital, Internal structural Capital and External Customer Capital.

Corporate disclosures (both mandatory financial reporting and voluntary disclosures made by firms' investor relations programs or through other channels) have drawn significant attention in the wake of corporate scandals in recent years. High-quality disclosures may facilitate communication between management and the equity market, thereby reducing mis-valuation and managerial myopia arising from information asymmetry and short-run market pressures. [1] Therefore, managers with favorable (yet private) information about future earnings have strong incentives to improve disclosure quality to convey such information to investors.[2]

Conceptualization of Intellectual Capital reporting

After recognizing the glaring reporting gaps and the dire need for more comprehensive reporting to be done by corporate, exhaustive efforts have gone in towards making generic procedures and guidelines for streamlining the reporting of Intellectual Capital in firms. These efforts have been supported by both firms and government equally. A large number of conclaves, conferences, seminars, workshops

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[1] Participants at the 2004 Roundtable on Corporate Disclosure of theNational Corporate Finance Forum pointed out "when application of this 'present value rule' requires that near-termearnings be sacrificed for long-term value, companies should make a serious effort to prepare the market and explain why earnings are going to be down. If the company's strategy is credible and its investor relations people are doing a good job, then the market should respond to the message."

[2] Evidence regarding the relationship between disclosure quality and stock returns has been scarce. A notable exception is Healy, Hutton, and Palepu (1999). They provide evidence regarding significant improvements in stock returns in the year of disclosure increases and the following year among firms with large and sustained increases in disclosure ratings.

research projects have been initiated worldwide trying to decipher better ways and means to gauge the ambiguous abstract yet very critical element of an enterprise its Intellectual capital.

Besides the theory building research, there has been a lot of work which has been directed to develop techniques which can give some value to Intellectual Capital in terms of figures. All the techniques used to measure and value the Intellectual Capital have been enumerated in this research.

The variety of such techniques is huge and all of them possess their respective strengths and weaknesses. The work has been tremendous in terms of mileage it has given in developing a better understanding of the term Intellectual Capital but they are not yet that refined to be adopted universally and applied generically to all types of firms. The reason for this lack of generalization of techniques is not in the techniques used to evolve them but it is due the differences between each firm even if they produce exactly the same product within the same markets with same stakeholders.

There have been attempts to conduct a meta-analysis of the field of intellectual capital. There is still a high degree of ignorance on how to construct an appropriate process and model aimed at enabling progress in further developing and managing intellectual capital. This is because most of the users and disseminators of information on a company are still oblivious to the need for information on Intellectual Capital. There is lack of clarity on who are the users of information on Intellectual Capital? What decisions would they like to make? What are the most appropriate reporting metrics and format? In order to further develop and manage the Intellectual Capital it is important that the researchers have a more comprehensive understanding of how and why organizations develop their intellectual capital. The focus could then be on developing appropriate reporting metrics and format for Intellectual Capital reporting.

There is a dire need to focus efforts towards making non-financial information easy to understand and measure. By achieving this, non-financial information becomes "...more financial and, thus, easier to include in the valuation of a company". In line

with this 'understandability dimension' above, it has been highlighted that there is an urgent need of non-financial information being more and *better structured in the annual report.* This could be a possible future development towards *more mandatory requirements being included* stating which nonfinancial information should be included and how they should be presented in the annual report. The aim of this is to ensure that the value drivers are appropriately reported in the Annual reports thereby helping in valuation of the companies to a relatively more accurate extent.

Valuation using Intellectual Capital

We have tried to analyse how the concept of Intellectual Capital has assumed significance in all corporate valuation processes. The term has been researched immensely with sole purpose of trying to understand how it creates value in the enterprise.

As Edvinsson and Malone (1997) point out, companies must build up their Intellectual Capital mainly in the following aspects:

- visibility and measurement for intangible asset;
- integration and workability of knowledge by knowledge sharing in the technology;
- excavation and classification of the Intellectual Capital through specialized training and
- development and informational technological internet; and
- raising the value of Intellectual Capital and then elaborating the financial and leverage functions
- by using knowledge rapidly and enhancing practical experience in profession
- and technology in order to commercialize the transformation.

The processes and techniques used to decipher corporate value using Intellectual Capital have been of different types and with different motives.

Techniques to Understand Value of Intellectual Capital

Most of the researchers have tried to identify non monetary elements in the firms which give the firms their real value. To make things relatively easy to understand

they all have used some models and measurement techniques in an effort to give a concrete shape to this abstract concept. The most preliminary techniques started with the Balanced Scorecard given by Kaplan and Norton and Intangible Asset Monitor by Svieby. Principal among the new reporting models serving this purpose are the intangible asset monitor (Sveiby, 1988; 1997; Celemi, 1998); the balanced scorecard (Kaplan and Norton, 1992; 1996); the Skandia value scheme (Edvinsson and Malone, 1997; Edvinsson, 1997); and the intellectual capital accounts (DATI, 1998).

These models highlighted the wide lacunae of corporate reporting which made it inadequate while catering to the reporting towards their market value vis-à-vis book value. This ignited extensive research and for the firms which were more dependent of knowledge products and services it became an imperative rather than a choice. All these situations necessitated that development of something more concrete which could be used to understand the assets that were the real creators of wealth. This led to the recognition of Intellectual Capital reporting as a very important component of Corporate valuation and reporting and was then even made mandatory in some of the European nations.

Past research using Content Analysis of Annual Reports.

Use of annual reports as a resource of information to study Intellectual Capital reporting has been a proven method of conducting the research

Annual reports are highly useful sources of information, because they are viewed as a communication device that allows a corporation to connect with various external and internal stakeholders (Guthrie and Petty, 2000). Annual reports also have the advantage of being regularly produced and offer an opportunity for a comparative analysis of management attitudes and policies across reporting periods (Niemark, 1995, pp. 100-1).

The vast amount of prior social and environmental reporting (social and environmental reporting) research (e.g. Cowen et al., 1987; Guthrie and Parker, 1989, 1990; Roberts, 1992; Neu et al., 1998) establishes the annual report as a major medium for communicating social and environmental information to public. Thus annual report was the most acceptable source of information to be analyzed for disclosures on Intellectual Capital. And since annual reports had to be studied for their

supplementary information rather than just the Balance Sheet and P & L account, a content analysis had to be conducted to identify messages that were getting conveyed to the investors which invoked their trust and thus maintained the market value of the share.

A study by Olsson (2001) examined the annual reports of the 18 largest Swedish companies, selected on the basis of market capitalisation in the Swedish stock market. Olsson (2001) developed a list of five elements to ascertain the level of human capital reporting. The study found that none of the companies used more than 7 per cent of reporting space to deliver human resource information in their annual reports. Furthermore, the information that was reported was found to be highly deficient in either the quality or extent of the disclosure.

This research is very similar to the study conducted by Olsson to study the overall reporting of Intellectual capital in the annual reports of Top 4 companies as per their market capitalization.

Use of qualitative content analysis for studying Intellectual Capital reporting

Qualitative content analysis does not produce counts and statistical significance; instead, it uncovers patterns, themes, and categories important to a social reality. Presenting research findings from qualitative content analysis was challenging. The form and extent of reporting was based on the specific research goal of assessing the pattern of voluntary disclosures made by Indian firms as done by Patton in 2002).

When presenting qualitative content analysis results, there had been some description and some interpretation. Most of the presentation is in the form of description in order to give the readers background and context and hence it has been made rich and thick (Denzin, 1989). This qualitative research is fundamentally interpretive, and interpretation represents the theoretical understanding of the researcher towards the phenomenon under study.

Process to analyze Intellectual Capital reporting

As it is understood by now that Intellectual Capital is something which is very unique and specific to the firm, generic reporting of Intellectual Capital is a difficult objective to be achieved. However if we do not go very deep into individualistic differences

there are a host of generic elements which are common across firms for which reporting can be attempted. This could cover most of issues related to reporting of elements which are critical to success and yet which do not appear in the Final accounts statements.

This research has attempted to exactly this. There has been an attempt to develop a model of conceptualizing the Intellectual Capital in the Indian firms and then reporting it in a generic report format.

Since the focus of the research was on voluntary disclosures the documents that are accessible and made available to all stakeholders have been used as source of information. This information has been carefully studied and analysed for its content.

The content has then been compared to the disclosures made by other firms and studied the way they have been done earlier. Past researches which conducted content analysis of annual reports have been used as a basis for the development of the process and design of this research. A host of researches have been done in the past which analyzed the content of annual reports and tried to identify the elements of Intellectual Capital from them. This research follows the same design and uses a framework which also has been collated from a host of past researched conducted to identify Intellectual Capital.

Development of framework

The framework has been developed after extensive research on all models and frameworks that have been used till date towards identifying and reporting Intellectual Capital in firms. All the elements were collated and repetitions were removed to make the framework as comprehensive as possible. Since application of the framework would give a picture from the perspective of predecided elements to ensure flexibility of the framework individual cases were developed where all the additional and supplementary information that was disclosed by the firms which could not fall into the elements identified in the framework were recorded so that while using the framework the generic terms which emerge from the cases could be included into the framework.

Cases were developed for 4 top companies of India as per their market capitalization.

They were as follows:

1. Infosys chosen for it being the largest company with maximum value created by intangibles and disclosures on them.
2. ONGC chosen for it beign the largest public sector company.
3. Reliance chosen for it being the largest private sector company
4. MMTC for being the largest services sector company in trading activities.

Framework to be used for classifying reporting of Intangibles under different heads of Intellectual Capital

Human Capital		Edvinsson (19911), Edvinsson and Malone (19911), Roos and Roos (19911), Roos et al. (19911), Stewart (1998), Bontis et al. (1999), Can˜ibano et al. (2000), Brennan and Connell (2000), Harrison and Sullivan (2000), Sa´nchez et al. (2000), Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001) and Mouritsen et al. (2002)
1.	Training and development expenses per employee	Ramboll (2003)
2.	Benefits from training exercises	Ramboll (2003)
3.	Image of company from employees perspective	Ramboll (2003)
4.	HR and HR practice	Gu and Lev (2001), Lev (2001) MERITUM (2002)
5.	IP assets	Brooking (19911)
6.	Knowledge/Skill	Granstrand (1999), Andriessen and Tiessen (2000), Brennan and Connell (2000) and Sullivan (2000)
7.	Innovation Capital	Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001)
8.	Discovery	Lev (2001)
9.	Employees and Employee competence	Mouritsen et al. (2004), Petty and Guthrie (2000), Petty and Guthrie (2000) and Sveiby (19911), Gunther (2001)

10.	Training	IASB (2004b)
Structural Capital		**Edvinsson and Malone (19911), Roos and Roos (19911), Roos et al. (19911), Stewart (1998), Bontis et al. (1999), Can˜ibano et al. (2000) and Sa´nchez et al. (2000)**
1.	Number of new product introductions	Ramboll (2003)
2.	R&D expenditure as a percentage of administration	Gu and Lev (2001), Redovisnings Ra°det (1995), LBK (1996), Redovisnings Ra°det (1998) and IASB (2004b)
3.	Research and development	Gu and Lev (2001), Redovisnings Ra°det (1995), LBK (1996), Redovisnings Ra°det (1998) and IASB (2004b)
4.	Technology	Itami (1991), Andriessen and Tiessen (2000), Gu and Lev (2001), Mouritsen et al. (2004) and FASB NN (2001)
5.	Internal Structure	Sveiby (19911), Brennan and Connell (2000) and Gunther (2001)
6.	Capital expenses	Chan et al. (2001) and Gu and Lev (2001)
7.	Licences	LBK (1996), Redovisnings Ra°det (1998), IASB (2004b), Redovisnings Ra°det (1995) and LBK (1996)
8.	Franchise	IASB (2004b)
9.	Future interests	IASB (2004b)
10.	Culture	Andriessen and Tiessen (2000)
11.	Strategy	Marr et al. (2003)
12.	Relational structure	Can˜ibano et al. (2000), Sa´nchez et al. (2000) and Petty and Guthrie (2000)
13.	External validation	Marr et al. (2003)
14.	Corporate Governance	Per Flo¨strand(2006), By ISS
Customer/External Capital		**Edvinsson (19911), Stewart (1998) and Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001), Itami(1991)**
1.	External structure	Mouritsen et al. (2002), Sveiby (19911) and Brennan and Connell (2000)
2.	Customers	Gunther (2001), Mouritsen et al. (2004), FASB NN (2001)
3.	Reputation of the company	Ramboll (2003)

4.	Investor capital	Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001)
5.	Stakeholder resources	Marr and Schiuma (2001)
6.	social and green responsibilities	Orlitzky et al., 2003

The framework is aimed to be generic so that it can be adopted for Indian companies. During the research it was observed that a few elements were reported uniformly across the firms. These elements could be included in the framework to improve the framework further and make it more apt for Indian reporting culture. These elements are as follows:

- **Corporate Social Responsibility**
- ***Goodwill***
- **Human Resource Development**
- **Training and Development**
- **Welfare**
- **Research and Development**
- **Focus on Child Education**
- **Sustainability**
- **Awards**
- **Values, Mission, Vision**

Summary

Most of the firms realize that since they hold the largest market capitalization in the Indian economic sector they need to maintain a lot of credibility in the minds of all their stakeholders. This credibility is not built just over the numbers that are reflected in the financial statements but these financial statements need to be supported with data and documents which further strengthen the image and reputation of the firm in the minds of their stakeholders.

They all use supplementary information which does not follow a common format and is also not regularized. It has been observed that there is a lot of common information that they all talk about but in different ways and using different words.

If a structure is provided to this supplementary information then the process of disclosure may become a more systematized exercise and may allow clearer and a more accurate presentation of facts. Intellectual capital exists and is reported by all firms but if it is given a formal structure it may become more clearly visible, measurable, and manageable and reported accurately.

Overall the framework that was used can be considered as a very useful starting point towards developing a model for reporting Intellectual capital in India and this could be developed further and refined further to enhance the accuracy of facts and data reported using this model.

Limitations of this Research

The biggest limitation was the number of case studies conducted but they were chosen to be the most trusted names hence it was assumed that their reports would be the most descriptive and comprehensive in nature. Inclusion of greater number of cases could change results but would need a lot more time and subsequent research.

Scope for Future Research

A detailed study using this framework could not only help improvise the framework by using terms which are more Indian audience friendly and more clear and accurate in their expectation in terms of reporting. The literature review is very exhaustive so future researchers need to just use this framework and try and improvise it or extend it further to be customized to Indian corporate reporting and stakeholders familiarity. The future researchers would rather need to further try and attach variables to the given elements so that they could be used as more descriptive tools for corporate valuation using Intellectual Capital reporting.

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DECLARATION

I do hereby declare that the thesis titled **"Understanding Corporate Value: Managing and Reporting Intellectual Capital in Indian Companies"** submitted to the Faculty of Management Studies and Research, Aligarh Muslim University, Aligarh for the award of the degree of **Ph.D. (Business Administration)** is a record of original work done by me under the supervision and guidance of **Dr. Bilal Mustafa Khan**, Department of Business Administration, Faculty of Management Studies & Research, Aligarh Muslim University, Aligarh and it has not previously formed the basis for the award of any Degree/ Diploma / Associateship / Fellowship or similar title to any candidate of any university in India or abroad.

Date: 11.03.2013

Indira Sharma

Place: Aligarh

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CERTIFICATE

This is to certify that the thesis titled **"Understanding Corporate Value: Managing and Reporting Intellectual Capital in Indian Companies"** submitted for the award of the degree of **Ph.D. (Business Administration)** is a record of original work done by **Ms. Indira Sharma** during the period of her study in the Department of Business Administration, Faculty of Management Studies and Research, Aligarh Muslim University, Aligarh under my supervision and guidance.

This thesis has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate of any university.

Date: 09.03.2013
Place: Aligarh

Dr. Bilal Mustafa Khan
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Approved by AICTE, Government of India

Ref. No. .....

Dated: .....

Certificate

This is to certify that Ms Indira Bhardwaj has completed her thesis titled "Understanding Corporate Value: Managing and Reporting Intellectual Capital in Indian Companies" according to the prescribed guidelines. I am satisfied with the overall quality and presentation of the said thesis. As per the best of my knowledge, the same thesis has not been published within AMU or any other University of Institution for the purpose of an award of any degree/diploma or certificate.

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Preface

Today's economic paradigm shift from manufacturing to services and finally to knowledge economy has made all companies realize that their sustenance, survival and existence all are governed by the most critical resource information. Today the business war is not about market share it is about information and knowledge. Knowledge is again not just defined by all that exists but encompasses all that has been created and is capable of being created. Today every stakeholder is information hungry and all these information users want more and more prospectively useful and accurate information. Thus information is the new strategic resource for one and all. Hence it needs to be utilized most optimally and besides its optimal use more pertinent is its identification and capturing this resource from its source where it dwells.

Empirical studies indicate that up to 80 per cent of a company's market value may not be reflected in its financial statements (Lev, 2001; Blair and Kochan, 2000). Recent studies have proven that more than 70% of value of a firm is attributed to its intangible assets and not its tangible assets which are accounted for and reported in the Annual Reports.

Thus there is a unison agreement among both scholars and practitioners that corporate value is not adequately portrayed in traditional financial statements due to its inability to capture the value stemming from intangible assets. This inability is argued to increase information asymmetry and, thus, cause an impairment of the efficient allocation of resources on the stock market (Kristandl and Bontis, 2007; FASB, 2001a; Diamond and Verrecchia,1991).

What has also been recognized is that the accounting discipline reflected in financial reporting as currently conceived cannot provide what is being demanded by information users and investors. Young, knowledge-intensive organizations encounter great difficulty in attracting external financiers, and as such need to develop a way to quantify their intellectual capital to showcase to their investors and financiers.

In practice, therefore, the meaning in use and context of the term 'Intellectual Capital' by its main advocates represents not the value of capital in the sense of its common use in economics as a stock of finance or physical assets, but represents cumulative knowledge, abilities and skills.

Intellectual Capital may be defined as the sum of all the knowledge (Stewart, 1998; Sullivan, 2000), which is owned by all the employees of a company and provides it with a competitive advantage, or to put it in other words, it is intellectual material such as knowledge, information, intellectual property and experience (Bontis, 1998), which companies use in order to create wealth. Furthermore, Intellectual Capital can be envisaged as a combination of intangible assets (Sveiby, 2000; Allee, 1999), or non material assets (Brooking, 1997; Lev, 2001), which do not appear on the balance sheets (Roos et al., 2001; Club Intellect, 1998), and, if well managed well, enable companies to achieve competitive advantages across time and generate value.

Robinson and Kleiner (1996) recommend that when good measures of Intellectual Capital are not available, indicators should be used as a means of signaling that Intellectual Capital is present or growing. Numerous Intellectual Capital indicators have been identified (Guthrie et al., 1999; Miller et al.,1999), as research teams promulgated different theories of Intellectual Capital and evaluated organizations against them.

Non-accounting researchers define "intellectual capital" as the "difference between the firm's market value and its book value of entity" (Edvinsson and Malone, 1997; Stewart, 1997; Sveiby, 1997; Mouritsen et al., 2001). To accounting researchers (Ohlson, 1995, p. 662; Feltham and Ohlson, 1996, p. 220; Beaver, 1998, p. 78; Holthausen and Watts, 2001, p. 50), the difference between the market value of the entity and the book value of the entity's identifiable assets is defined as "goodwill." Goodwill is also known as "intangible assets."

The reasons why it has been difficult to define Intellectual Capital are plenty. Primary among them is that Intellectual Capital is being governed by huge number of indicators and factors which all need to be included on broad parameters while

defining Intellectual Capital. Keeping this magnanimity of the concept in mind, it seems more appropriate to classify the various aspect of Intellectual Capital instead of trying to give precise definition to it. This is because classification is less stringent than definition.

Rationalization of Intellectual Capital using the categorization approach better describes what Intellectual Capital is as compared to using the definition approach. There are two reasons for this. First, as Intellectual Capital is mostly invisible it is much harder to define compared to many other items. Second, the study of Intellectual Capital is relatively new and evolving, and it is hard to isolate the range of activities associated with Intellectual Capital that can be included in it and defined. However, even if we adopt the classification approach, issues still remain. There is still no cohesive methodology and objective used in classifying Intellectual Capital. Moreover, inconsistency and overlap of classes and sub-classes occurs frequently and there is no agreed classification schema across studies of Intellectual Capital. What we need is a system to streamline the various categories and terms into manageable categories (classes).

Today, many executives recognize the importance of Intellectual Capital as a principal driver of firm performance and a core differentiator (see, e.g., Marr, 2006; Carlucci et al., 2004; Marr, 2004b). But not only are the enterprises seeing the value in Intellectual Capital; the governments are also recognizing the importance of it (Marr, 2004c).

An increasing number of firms start to report more of the intangible aspects of their business, even without the force of regulations. This trend is especially observable in Europe with various initiatives by the European Commission (e.g., projects such as METITUM, E*KNOW NET, PRISM).
Another example is presented by the Danish Department of Trade and Industry, which produced guidelines of how companies can produce Intellectual Capital reports.
In Austria the government has passed a law that all universities have to report on their Intellectual Capital, in the UK companies will be forced to produce an Operating and Financial Review outlining many intangible elements of their business, and

countries as diverse as Iceland, Germany, and Spain have started their own initiatives. At the same time accounting guidelines are being amended and standards are being questioned and reviewed to reflect the growing importance on intangible elements. With the introduction of the International Accounting Standards more emphasis will be placed on accounting for intangible components and stricter compliance rules force companies to report on other intangible aspects of their performance.

Leading software companies such as SAP, Hyperion, Oracle, 4GHI and PeopleSoft are developing applications to address this, and even governments are beginning to measure the Intellectual Capital of cities, regions, and countries. Also, many consulting companies have discovered different areas of this increasing awareness and interest in Intellectual Capital and now offer their services. *PricewaterhouseCoopers*, for example, offer their services to help companies in their value reporting initiatives to increase transparency in corporate reporting, while *Watson Wyatt* offer human capital audits. In recent reports or marketing material from different consulting firms this trend is apparent: *Accenture* writes that today's economy depends on the ability of companies to create, capture, and leverage Intellectual Capital faster than the competition. *Cap Gemini Ernst and Youn*g believes that intangibles are the key drivers for competitive advantage and *KPMG* states that most general business risks derive from intangibles and organizations therefore need to manage their intangibles very carefully. *PricewaterhouseCoopers* writes that, in a globalized world, the Intellectual Capital in any organization becomes essential and its correct distribution at all organizational levels requires the best strategy, integrated solutions, processes and technology.

It has been proven that a company can choose to disclose voluntary information that exceeds mandatory disclosure regulations in order to reduce information asymmetry and, thereby, mitigate agency problems (Wyatt, 2002; Tasker, 1998). This will produce more informative disclosures enabling external stakeholders to better assess the company's future value-creation potential. This does not only decrease information asymmetry and, thereby, enhance the efficient allocation of resources on the stock market, it also results in a lower average cost of both equity (Kristandl and

Bontis, 2007; Botosan and Plumlee, 2002; Richardson and Welker, 2001) and debt capital (Sengupta, 1998), decreased bid-ask spreads (Petersen and Plenborg, 2003; Welker, 1995), and increased stock liquidity (Healy *et al.*, 1999; Diamond and Verrecchia, 1991).

Intellectual Capital disclosures need to be studied using documents published by the firms for the stakeholders. Most commonly referred to document is the annual report. The use of annual reports has been validated by earlier researches for accessibility, consistency, timeliness and finally it being an audited and comprehensive document; perceived to be more reliable than other documents (Chander, 1992; Guthrie and Petty, 2000; Brenan, 2001; Olsson, 2001; Bontis, 2003; Bozzolan *et al.*, 2003; Abeysekera and Guthrie, 2005; Pablos, 2005). There are numerous frameworks available to study disclosures on Intellectual capital. A few are used more commonly than the others like the Balanced Scorecard and Intangible Asset Monitor.

Modified Intangible Assets Monitor has been used to capture the disclosure of elements of Intellectual Capital framework by a few previous researches. (Petty & Guthrie, 2000; Brennan, 2001; Bozzolan et al, 2003). The technique used for calculation of disclosure index was Content analysis, a popularly used technique for corporate social and Intellectual Capital disclosures. (Yi and Davey, 2010;Joshi *et al* 2010).

Annual reports have thus been used extensively to understand and analyze reporting of Intangible assets and Intellectual Capital. These reports have been used to develop case studies which try to gauge the extent of disclosures made by the firm and then map them to the framework developed for the cases.

Thus this research focuses on understanding how corporate value is created and reported by firms using Intellectual Capital Disclosures in Annual reports. There has been an attempt to identify a framework which can be used by firms across industries to bring about generalization of the utility of the framework across industries. To decipher the high market value of the shares companies with high market capitalization have been chosen. The information collated as per the framework has

been used to develop cases for further analysis. Thus the research methodology used is Case study approach.

Case studies have been criticized by some as lacking in scientific rigor and reliability and that they do not address the issues of generalizability. However, there are some strengths of case study. It enables the researcher to gain a holistic view of a certain phenomenon or series of events and can provide a round picture since many sources of evidence are used. Another advantage is that case study can be useful in capturing the emergent and imminent properties of life in organizations and the ebb and flow of organizational activity, especially where it is changing very fast.

Case studies also allow generalizations because the result of findings using multiple cases can lead to some form of replication and more number of cases leads to more generalizations.

Cases thus showcase all disclosures which are related to the intangible assets and thus are also a part of Intellectual Capital as defined for the research. The framework has been modeled to give a generic reporting structure to the Intellectual Capital of 4 firms – Infosys, MMTC, ONGC, Reliance Industries. Since the number of firms was very less the applicability of the framework is not entirely proven and needs to be studied further as an extension of this study to ensure that it can be adopted completely.

The aim of this research was to frame a model which can be used to report Intellectual Capital. This framework was developed with inputs from all earlier researches which have used these elements successfully for assessing Intellectual capital reporting in firms outside India. This study is the first of its kind in India but it needs to be done for greater number of firms for it to get an acceptable standard of generalization.

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Indira Sharma

Table of Contents

List of Tables

List of Figures

Chapter 1

Foundation of Intellectual Capital

"*Empires of the future are the empires of the mind*" Sir Winston Churchill.

1.0 Introduction

The world economy has seen some significant structural changes in the recent past. There has been a decline of manufacturing in western economies as is the concomitant rise in services. Transcending from an agrarian economy to a manufacturing economy followed by service sector economy finally into knowledge economy, human civilization has witnessed significant changes in its facets of life and its evolution. Today "information society", "knowledge society and "knowledge economy" are the most commonly heard words in the world of both business and academia. These are some of the concepts that were created to identify and accentuate the role of knowledge in economic growth.

This shift in the economic foundation has brought about an important change in what is being produced and what is being bought by consumers and businesses. While a range of tangible products – goods are still being purchased directly by consumers and businesses, more and more of the emerging criteria for purchase are the intangible component of the products – experience and feeling. Customers today are more intelligent, aware and clear in placing their requirements and defining their needs. Products and markets are thus more specialized and customized. With this increasing demand for specialized and customized products and services, most of the firms are either knowledge - based, knowledge - intensive or knowledge - driven. This knowledge is created, stored, managed, developed and finally reported within the firm. It has an intangible form but very tangible results. The tangible results which can be seen can be used to map the intangible assets which cannot be seen.

This research tries to explore ways and means to identify, decipher, explore measure and manage these intangible assets or the intellect of the firm which is not visible, and

more often than not, does not get reported in the financial reports published by the firms.

1.1 Understanding knowledge within an enterprise

Very often the intangible assets are defined as knowledge of the enterprise. Knowledge may be defined as all the information, facts, truths, and principles learned over time. Specialized knowledge now commonly referred to as business intelligence has thus become a significant part of business strategies. Organizations thus become intelligent entities which experience change and learn continuously through their experiences. This has led to the advent of Knowledge Management as an upcoming field of study which helps to understand and manage this intangible asset called *knowledge*. But is knowledge the only asset that needs to be managed in a firm is a question we will delve into and try to answer.

In today's knowledge economy success or failure of a firm is determined by its learning and development capability. With addition of this new element of learning and development, determining the value of a firm is a difficult task because it is complicated to measure an abstract asset like knowledge. It is even more tedious because this knowledge or intellect of the firm should not be calculated as the value of the firm in its present form, but it needs to be estimated on the basis of what it could become in the future if it manages its knowledge or intellect well.

With the advent of knowledge economy it is not just the firms, it is also the stakeholders that have become more aware and are more concerned about the safety and growth of their stakes and investments embedded in the assets of the firms. Thus they are more critical in their evaluation of the firm to which they have entrusted their investments. They seek more security and strength in their investments for the future rather than the present. Thus there is a need and a demand for a more accurate valuation of the firm.

Traditionally, most or rather all the valuation of the firm is based on the financial reports published by the firm. These reports carry the details on all assets, liabilities, expenses and revenues of the firm in monetary forms. The corporate governance reports, now a mandatory part of the annual financial report, carry the details of the people heading the organisation so as to make the stakeholders aware of the people who are steering the activities of the firm. Thus the annual reports are supposed to be

complete documents which comprehensively explain the valuation of the firm. But there is still as unexplored part of the valuation of the firm when it comes to the value given to the firm as a sum of all its shares (unit of equity) of the firm thereby necessitating that all the value is explained in terms of all that the firm has and then that is divided equally among its shares. Thus the total value of all the shares should accurately reflect the actual value of the firm as a sum total of all its net assets. But in reality the book value reflects the historical value of the shares and the market value reflects the market perception of the shares. The true value of a share does not get reflected anywhere and then there is also a huge gap in the book value and the market value of the share.

More often it is observed that the value of the firm is derived through the market price of its share which constitutes its market capitalization. Similarly value of its share is also derived from its financial reports using its total asset base and its future probability of profitability. It is observed that the two values i.e. the book value of the share and the market value of the share, is very rarely or rather never the same. There is a huge gap in the way the stakeholders valuate the firm and the way the internal auditors valuate the firm. This difference in value is generally in the form that the market value is much higher in fact many times over the book value of the share.

This unexplained inflation of figures may sometimes lead to wrong choices and decisions being made by the investors. Thus there is a need to bring parity between the two valuations by bringing the book value at par with the market value. This is nearly an impossible task because the market value is decided by the market forces which cannot be accounted for or controlled by the internal functioning of the firm. In fact the stock markets have been flourishing with this non-permeability of market and firm valuation parameters for all these times. The need has been recognized and realized but there is not much done to deal with it. The only way of dealing with this is to explain the reason of the inflation of the market price using some assets which are a part of the firm and are not a part of the Annual reports because they cannot be quantified hence are not reported.

Thus the huge gap between market capital and the book capital can be explained by attributing the difference in value to assets which give a lot of value to the firm but cannot be quantified. These assets are the intangible assets or the intellectual assets of

the firm. As shown in Figure 1.1 below the difference between the market and the book value is the value of the intangible assets of the firm

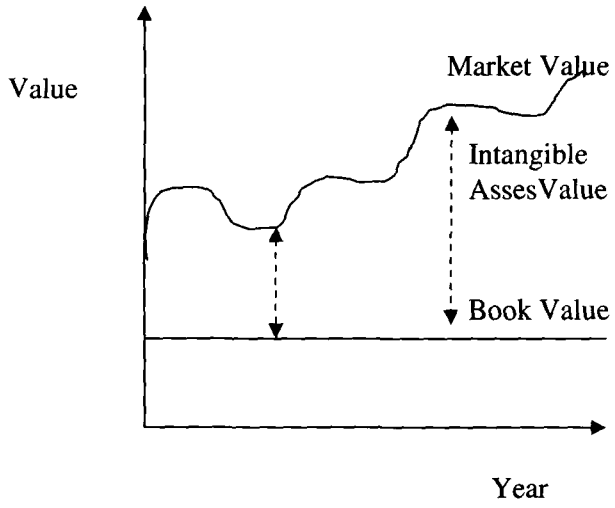


Figure 1.1 – Intangible assets create the market value
Source – Market Intelligence Centre Taiwan (2003)

1.2 Need for a better valuation

As has been observed and agreed upon, because of the way knowledge and intangible assets play a greater knowledge in defining the value of a firm, valuation of the firm needs to be done using better and more accurate techniques. To start with we may need to understand that valuation of a firm is not what it is today but more of what it would mean in the future. Thus we can safely assume that it is the value created by the firm for tomorrow which is the real valuation of the firm more than anything else in predecided monetary terms.

Thus the focus is value created or to be created by the firm. This value can be identified, measured and managed using various constructs and metrics because it is impossible to give it a monetary figure. These value propositions, constructs, metrics and models thus identified will valuate the firm from a perspective that the value of the firm is not where the firm stands today but is defined by what future it holds for its stakeholders.

Talking about value in the future entails a clearer demarcation and definition of future

in general and future for the firm. Coming to defining future, we know it is a tedious task especially if the present has not been understood and defined accurately. In common parlance however we may assume that future could be preconditioned by survival and sustenance. If we do not survive and we do not sustain we cannot have a future. So we need to sustain if we want to see the future.

1.3 Contribution of intangibles to firm's performance

As early as 1998 researchers started asking questions about Intangible Assets contribution to firm's performance and competitive advantage by measuring both concepts and linking them formally. Bontis (1998) in his exploratory pilot study shows a valid, reliable, significant and substantive causal link between intangibles and business performance. Since his study the relevance of Intangible Assets for financial performance is getting more widely accepted. A number of studies have been conducted in the form of survey based researches to further establish the need for Intellectual Capital reporting. They are as follows:

i. **A survey of 1,016 company directors by McKinsey Consulting (2005) showed a shift in company directors' information requirements and identified the demand for more effective reporting of business information.** According to the survey company directors need and demand more information about intangible resources including, for example, customer relations, employee satisfaction and network and operating health. The survey also points out that the current lack of information about Intangible Assets may compromise the ability of company directors to fully understand the objectives and risks of their companies. This shows that there may be a demand for information.

ii. **Another similar Accenture's (2003) global survey similarly found that company directors and others significantly lacked information about intangibles.** This survey showed that only 5 percent of companies had in place "a robust system that measured and tracked the performance of intangibles". This also contrasted to 49 percent of company representatives who said that Intangible Assets are what their companies primarily rely on for shareholder wealth creation. All this led to identification of a need for knowledge about how to make sense of the firm's intangible resources with a view to improve business

decision making and investment. Thus, firms are not generally able to track investments in, and effects of, intangibles, which may be a hindrance to firms trying to justify innovation and investment into knowledge resources.

iii. **On a similar note, 92 percent of participants in a Deloitte (2004) survey had warned that traditional financial indicators found in financial statements are not enough to capture their companies' strengths and weaknesses and called for increased disclosure of EBR information.** Although financial measurements received a high rating from survey respondents in helping the board and CEO make short-term decisions and in formulating strategy, but there was also strong conclusion that all **such financial data was less helpful in making mid and long term decisions and in achieving an appropriate valuation in capital markets.** This represents another recent recognition that the financial statements tend to deflate the complexities of modern corporate activities. It may not readily inform producers and users of the innovative capabilities residing in and around the firm.

iv. There are a number of other studies that further emphasized the importance of the interactions between intangible elements as they tend to enhance organizational performance (Carmeli and Tishler, 2004; Bontis, 1998). Different dimensions of firm's current and future performance like survival and profitability (Delios and Beamish, 2001) or firm's market value and financial performance (Chen, Cheng and Hwang, 2005) have been related to their Intangible assets more than the financial assets.

1.4 Need for Intellectual Capital Reporting

As shown in the Figure 1.2 there is an increasing proportion of Non Financial Capital vis-à-vis Financial capital as studied by Market Intelligence Centre Taiwan in 2003. This has further been studied and validated by studies all across the world. In the United States, both the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) examined and confirmed the need for Intellectual Capital reporting. Both have concluded, however, that before setting any standards, time should be allowed for Intellectual Capital reporting models to develop beyond their current rudimentary state. The case is very similar in other developed

economies, and despite the large number of studies and reports on the subject to date no standardized model has emerged. Part of the perplexity is caused by the divergent accounting approaches that developed to deal with Intellectual Capital reporting. Not only have few divergent approaches emerged to deal with Intellectual Capital reporting, there are variances in dealing with different types of Intellectual Capital under each of the approaches.

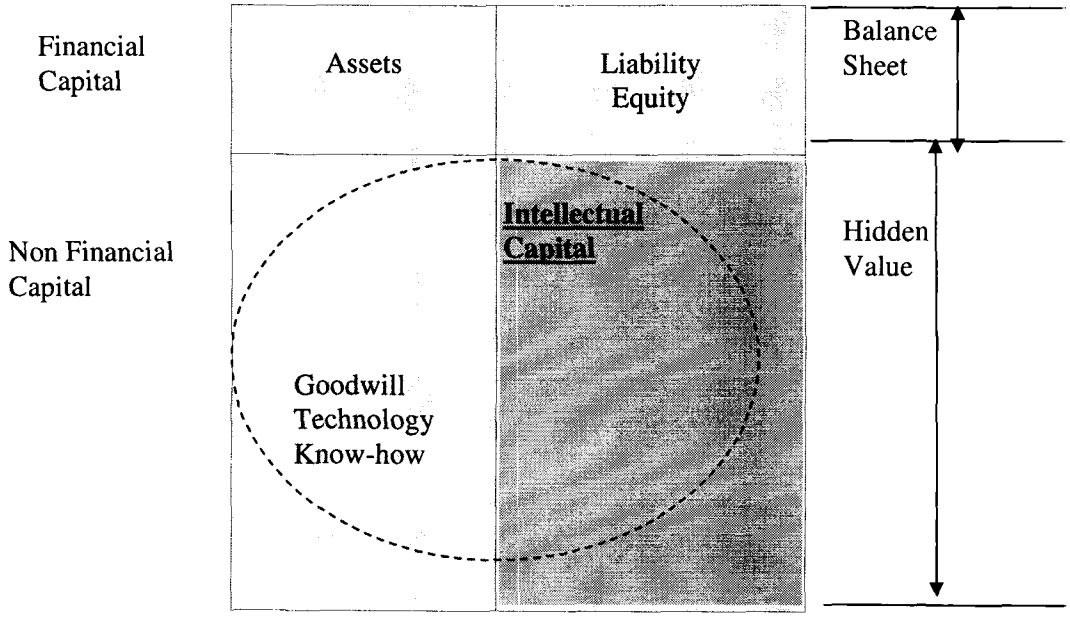


Figure 1.2 The Proportion of Non Financial Capital vis-à-vis Financial Capital as studied by Market Intelligence Centre Taiwan in 2003

There are a number of other reasons why firms need to and want to measure Intellectual Capital. The predominant reason however has been for strategic or internal management purposes. Specific other reasons include:

- To understand better what are the real resources that the company possesses. These resources which are not tangible, visible and physical are the most crucial and pivotal aspects determining firms success and failure
- To align the Intellectual Capital resources with strategic vision thereby

ensuring comprehensive support for the implementation of the strategy.

- To determine the most effective management incentive structures.
- To better allocate resources between various business units and extract full value from acquisition and joint ventures.
- To support and maintain accurate awareness on the company which would help to bridge the present and past of the firm and carve out its future.
- To influence stock prices, by making several intangible competencies visible to current and potential customers.
- To make the company appear as a respectable name providing an identity to the employees in the public.
- To ensure that knowledge of employees stimulates the development of policies and products that increase customer satisfaction and loyalty.

Given the above reasons that dictate the need for Intellectual Capital reporting the firms have developed a lot of interest in Intellectual Capital measurement and reporting. It has been seen that attempt to measure Intellectual Capital has largely been driven by companies that rely heavily on knowledge as a key input to production. Firms which develop a deep understanding of the role of knowledge in their business, treat it as an asset, cultivate and exploit it, are gaining significant business benefits. Such investment in knowledge has a long-term pay-off, but shows no physical assets as evidence. To gauge the relative profitability of such investments, firms need to be able to measure their Intellectual Capital.

Stewart in 2001 studied the value of Knowledge Capacity in a few of fortune 500 firms in terms of US $ as given in Table 1.1 which intrigued the creation of this capacity in firms. Besides this it has been found that the majority of thinkers focus on the relationship between intangibles and Tobin's Q or such profitability ratios as Return On Assets (ROA) or Return On Equity (ROE). It has been recognized however, that all such indexes suffer from well-known conceptual disadvantages like for example that they are not able to reflect effectively the multidimensional character of performance.

Table 1.1 – Knowledge capacity of firms as calculated by Stewart in 2001.

Rank	Rank (*F* 500)	Name	Knowledge capacity (mio US$)
1	8	General Electric	254,381
2	138	Pfizer	219,202
3	201	Microsoft	204,515
4	34	Philips Morris	188,538
5	1	Exxon Mobil	176,409
6	110	Intel	173,984
7	49	SBC Communications	155,402
8	19	Intl Business Machines	148,679
9	32	Verizon Communications	141,471
10 Source: Stewart (2001)	88	Merck	139,494

The current state of financial reporting is not entirely suitable for the need for more elaborate and accurate presentation of facts.

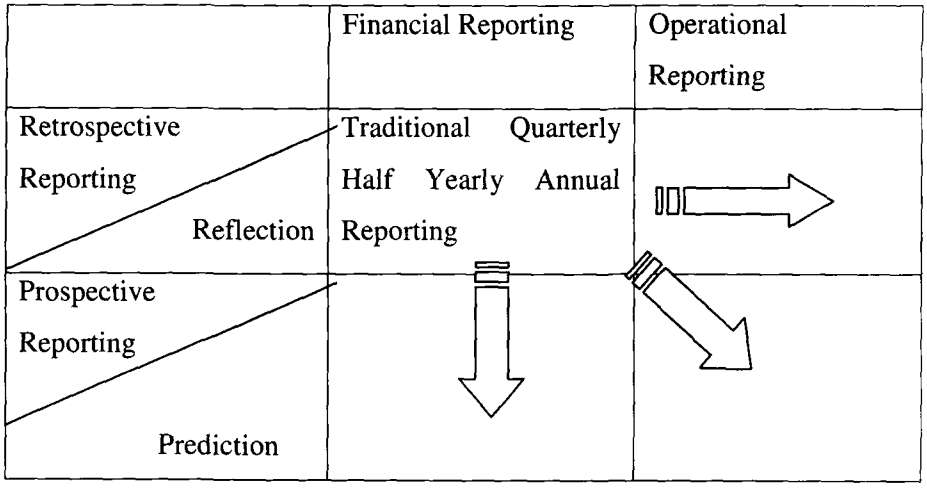


Figure 1.3 Need for Operational Reporting along with Financial Reporting

As shown above in Figure 1.3 the need of the hour for modern enterprises is value reporting based on the dual requirements of both financial and operational reporting. The requirement for financial reporting is explicit and met with. **It is in relation to**

operational reporting that intellectual capital reporting has a fundamental and substantial contribution to make. This will particularly be the case for those business models that do not represent the traditional value chain.

It matters even more now because capital markets are not efficient in the absence of complete and relevant enterprise future performance-related information. Investors make bad capital allocation decisions, they don't get the returns they could get, capital gets trapped, and the cost of equity capital for companies is higher than it needs to be, and so on. Thus there is a need for something more than conventional accounting which gives clearer picture of what a firm stands for.

1.5 Deviation from conventional financial accounting

As is evident by now, because of the nonfigurative characteristics of Intellectual Capital, the concepts of conventional financial accounting may not suffice as measurement and reporting tools. This is more so due to a number of reasons:

- Firstly because the elements that would comprehensively define and describe Intellectual Capital have not yet been formalized,
- Secondly there are no universally accepted elements and standards for Intellectual Capital reporting and measurement,
- Thirdly the financial accounting standards are all based on the concepts of monetary valuation of resources which may not be possible to be achieved with accuracy for all elements composing Intellectual Capital, and
- Finally the reporting of Intellectual Capital is not mandatory in most of the countries hence does not necessitate much interest in development of acceptable conventions and standards for reporting of Intellectual Capital.

Depending on the scope and basic concepts involved some authors claim that there are major differences between financial accounting and the measurement of intellectual capital. These differences are conceptually towards a higher level of abstract evaluation:

- Firstly, Intellectual Capital measurement is supposed to be future-oriented while financial accounting is supposed to look backwards.
- Secondly, Intellectual Capital measurement is further claimed to capture some very abstract facts like abilities and qualities, while financial

accounting is designed for very concrete facts akin to quantities. Finally, Intellectual Capital measurement is seen as a resource oriented concept with a focus on the causes of value creation, while financial accounting is seen as reflecting the outcome of the latter.

But, if we look at matters more closely, some of the differences may fade away because ultimately both aim at better and more accurate reporting of assets and liabilities of the organization (Sveiby 1998, Edvinsson / Malone, 1997, Stewart, 1997, Amidon, 1997, Roos et al. 1998, Danish Trade and Industry Development Council, 1997).

On a detailed perspective it can be mentioned that though both concepts focus on assets but the difference is that traditional accounting measures and manages only visible and tangible assets which have a monetary value attached to it. This in turn helps to know which assets are appropriate over the others as far as their value is concerned.

1.6 Considering Value creation as an essential prerequisite for valuation and accounting of assets

Roslender and Fincham (2001) observed that there is very little empirical academic literature on how management accounting handles intellectual capital. The potential for an exponential impact on profit from investment in Intellectual Capital has been pointed out, however, and Tayles et al. (2002) have made the case for the potential role of strategic management accounting to focus on the evaluation, appraisal, and measurement of Intellectual Capital as a development in internal reporting.

Ironically though all assets are accounted for in the traditional accounting set up there is no certainty in the claim that all of them necessarily create value. In fact, if they do not, for instance if wrong goods were produced in the building by the machines and transported by vehicles, then the whole investment is considered as sunk cost. Extending it to intellectual capital accounting, the same would hold true for investment in intangibles, if they do not create value they are not a part of the assets and are a liability or a cost. So it may even be concluded that anything that creates value for a firm needs to be accounted for, measured and managed. Applying the same principle for Intellectual Capital accounting all assets that will create value but

are not visible and tangible too need to be measured and managed. Thus all assets created or expenses incurred are supposed to create value in future. If they do not then they are expenses and not investments. Thus the value of both investments intellectual and financial, relies on a hypothesis, namely that the investment will pay-off in the future.

1.7 Analysis of traditional accounting vis-a-vis operational accounting for Intellectual Capital

Financial accounting does not rely on facts or unquestioned theory but on convention. With regard to future results they are as uncertain as are numbers on intangibles. Intellectual Capital measurement may seem abstract in its process and application but it also attempts to capture investments as inputs, with intervening variables such as employee and customer satisfaction, along with some results thereafter. There is no difference to traditional financial accounting where intermediate results are for instance captured in semi-finished and finished products and final results are reflected in P/L statements.

Traditional financial accounting, especially in its European version, is based on cash flows which have been realised, while propositions for the measurement of Intellectual Capital include assessment of immediate outflows of cash in the present (such as training expenditure) and cash inflows expected in the future. The latter are insecure, but this has always applied to tangibles as well, when they were evaluated in the processes of mergers and acquisitions (Mandl/Rabl, 1997).

The difference between accounting for traditional assets and Intellectual capital comes down to the degree of accessibility of an asset. The measurement and accounting of intangibles is different and difficult if they are less accessible and if they reside in abstract form for example in the heads of people or in such ephemeral phenomena as good climates and innovative, entrepreneurial cultures. Therefore there is need for a strong and questionable tendency to transform less accessible, less visible abstract capital into a capital which is more accessible, more visible and more concrete.

1.8 Challenges in accounting for intellectual capital

There are several reasons why Intellectual Capital is a challenging area for

management accounting and accounting in general (see e.g. Abernethy et al., 2003).

- First, Intellectual Capital and the various intangible resources it consists of are non-physical and immaterial. These immaterial phenomena cannot usually be visually observed nor counted.
- Second, Intellectual Capital consists of a stock of intangible resources, e.g. brands and organizational culture, which are created over time. For example, organization's image or the knowledge of employees increases (or decreases) over time without a clear link to any specific transaction, e.g. investment or purchase. As accounting is strongly based on transactions of different items, observing the changes in Intellectual Capital is challenging.
- Third, determining the monetary value of Intellectual Capital is problematic because it is difficult to find out how a certain specific intangible asset contributes to a company's earnings. In addition, contrary to many tangible assets, e.g., equipment and land, there is usually no market for trading Intellectual Capital (with the exception of immaterial properties such as patents).

1.9 Essentials for effective Intellectual Capital reporting

What is also important now is to recognize that it is the business model of the enterprise which will determine what information is likely to be of most use to information users. While trying to assess and report Intellectual Capital in firms within the various models that have evolved recently there are three necessary and sufficient conditions for developing a comprehensive reporting and disclosure reporting framework within which intellectual capital reporting has its fundamental place.

These three conditions or prerequisites of effective Intellectual Capital reporting are:

(a) A regulatory requirement and a standardized framework for reporting Intellectual Capital

(b) Standardized operational performance term definitions and measures and

(c) A set of standardized adjustment treatments for the mapping of traditional financial accounts to management accounts that will reflect the capitalization

and amortization of relevant intellectual capital resources.

A lot of research has been done but still needs to be done to be able to give a concrete shape to Intellectual Capital Reporting in India.

1.10 Summary

During this research there has been an attempt to break free from an "accountingisation" of Intellectual Capital. The measurements of Intellectual Capital have been explored thoroughly using models, frameworks and elements which have been used outside India to decipher Intellectual Capital in a firm and the ones most suitable to Indian scenario are collated and presented using cases to support their utility and functionality. It is essentially creation of a new context in opposition to attempting to "fit" a specific Intellectual Capital context into one of the contemporary Intellectual Capital measurement frameworks.

For this research the concept of Intellectual Capital has been studied by using three simple components and their constituent elements. All these components and elements have been chosen after a detailed literature review which validates their usage and selection to be used as definitive constituents of Intellectual Capital. All such elements of Intellectual Capital have been used widely to report Intellectual Capital in firms outside India but none have been used to report Intellectual Capital in India. This research tries to map the Intellectual Capital definitions and descriptions given till date to the current state of firms as they report about their achievements which are beyond financial figures. Thus this research is an attempt to understand how corporates create and communicate their value using Intellectual Capital disclosures.

Chapter 2

Literature Review

2.0 Introduction

Intellectual Capital is considered an important factor of most companies' success. Especially in knowledge-intensive organisations performance is strongly based on Intellectual Capital. (see e.g. Lönnqvist et al., 2005; Stewart, 2001; Sveiby, 1997) While most managers are aware of the importance of their organisation's Intellectual Capital they lack means for obtaining information about it (Dion, 2000; Neely et al., 2002; Nordika, 2000).

Considering the vast scope of the range and type of activities that create value and govern its manifestation in the form of Intellectual Capital, it is very difficult to coin a concise definition of the term Intellectual Capital.

Various researchers have put in a lot of effort in trying to decipher means of creation of Intellectual capital in firms. Thus Intellectual Capital is a mix of resources of the firm which help create value and not just profits. These resources are generally not accountable because, neither is the value that they create visible, nor is their existence visible. Hence all that can be done and has been done in defining and understanding Intellectual Capital, is an attempt to identify value drivers in an organisation which help create sustainable profits and value added deliverables to all stakeholders.

Last chapter explains how and why the need of Intellectual Capital has been felt by everyone over the years. But it was observed that mere acknowledgement of existence of Intellectual Capital was not enough to gauge the differences in the various ways firms are valued. In order to bring synchronization and generalization in the understanding of corporate value using Intellectual Capital there was a need for more accurate and generic methods of identifying, managing and reporting Intellectual Capital. Following this was a pressing need to understand that only identifying Intellectual Capital was not enough and there was a need to decipher the exact value adds that it was providing to the overall functioning of the firm. To understand how exactly was it contributing to the creation of value within and outside the firm.

2.1 Foundation of intellectual capital

Different researchers on Intellectual Capital agree that knowledge or intellect of the firm is its strength which helps to generate sustainable competitive advantage for it; however, there is no significant clarity between its theoretical perspective and practical application (Kaufmann and Schneider, 2004.)

As with Becker's concept of 'human capital', the derivative concept of 'intellectual capital' also is a metaphor, attributed to John Kenneth Galbraith by Feiwel in his volume The Intellectual Capital of Michael Kalecki (1975), with Galbraith asking in 1969 in a letter to Kalecki: 'I wonder if you realize how much those of us in the world around have owed to the intellectual capital you have provided over these past decades' (Galbraith, cit. Feiwel, ibid.). Certainly 'intellectual capital' is both striking and straightforward as a metaphor for an individual's accumulation of knowledge. It is well known that the pioneers on the research and the practice of Intellectual Capital are Karl-Erik Sveiby who introduced the concept of "intangible assets" in 1997, and Tom Stewart who popularized it through an article in Fortune magazine in 1994 and his book in 1997. Other contemporary contributions to Intellectual Capital are those of Edvinsson and Malone (1999), Sullivan (2000), Brooking (1997), and Roos et al. 2001 (Allee, 2000; Petty and Guthrie, 2000; Kaufmann and Schneider, 2004). From Kaufmann and Schneider (2004), it can be surmised that the methods of understanding and explaining Intellectual Capital are generated from the procedural application invented by these researchers.

If one examines each of the concepts used by the different authors, a group of similarities between them can be identified, through terms/constructs used, such as "intangibles", "knowledge" and "value creation". Therefore, and in agreement with the initial notion, Intellectual Capital may be defined as the sum of all the knowledge (Stewart, 1998; Sullivan, 2000), which is owned by all the employees of a company and provides it with a competitive advantage, or to put it in other words, it is intellectual material such as knowledge, information, intellectual property and experience (Bontis, 1998), which companies use in order to create wealth. Furthermore, Intellectual Capital can be envisaged as a combination of intangible assets (Sveiby, 2000; Allee, 1999), or non material assets (Brooking, 1997; Lev, 2001), which do not appear on the balance sheets (Roos et al., 2001; Club Intellect,

1998), and, if well managed well, enable companies to achieve competitive advantages across time and generate value.

Mouritsen, Bukh, and Marr (2005) underline that: "The purpose of the Intellectual Capital statement is often two fold, as it functions as a management tool used internally in the firm and as a communication tool used to communicate how the firm works to develop its knowledge resources to generate value. Developing such statements improves the internal understanding of which resources are important and how they are combined and managed to create value".

Many philosophers have attempted to understand and explain Intellectual capital from the perspective of creation of value in future. For instance, Edvinsson and Sullivan (1996) re-defined intellectual capital for Skandia as 'knowledge that can be converted into value', adding that: 'it is clearly to the advantage of the knowledge firm to transform the innovations produced by its human resources into intellectual assets, to which the firm can assert rights of ownership' (Edvinsson & Sullivan, ibid., p. 358, our emphasis). The intellectual capability of the firm can be showcased by the term Intellectual capital which has been widely read and researched till date. Academicians have thought and rethought ways of identifying, defining and measuring Intellectual competence of the firm often revising themselves in the process as they encounter newer demands for validating their ways and proposals.

The literature review across disciplines indicated that there is a wide range of definitions that can be considered as Intellectual Capital. The literature is also proliferated with different terms to describe either the same or different information used in relating to Intellectual Capital. For instance, non-accounting researchers define "intellectual capital" as the "difference between the firm's market value and its book value of entity" (Edvinsson and Malone, 1997; Stewart, 1997; Sveiby, 1997; Mouritsen et al., 2001). To accounting researchers (Ohlson, 1995, p. 662; Feltham and Ohlson, 1996, p. 220; Beaver, 1998, p. 78; Holthausen and Watts, 2001, p. 50), the difference between the market value of the entity and the book value of the entity's identifiable assets is defined as "goodwill." Goodwill is also known as "intangible assets."

This difference between the firm's market value and its book value of entity is never fully explained let alone identifying the constituents of the difference between market

value and its book value. Goodwill can be externally or internally generated. According to generally accepted accounting practices of most countries, only external goodwill, or purchased goodwill can be reported and its value amortized over its useful life (AICPA, 1970; ASB, 2004a, b; IASB, 2004a).

2.2 Chronological Review of the emergence of Intellectual Capital

A general timeline of major intellectual capital practice and research milestones appears in Table 2.1.

Table 2.1 – Milestones: a chronological review of significant contributions to the identification, measurement and reporting of intellectual capital

Period	Progress
Early 1980s	General notion of intangible value (often generically, labelled "goodwill")
Mid-1980s	The "information age" takes hold and the gap between book value and market value widens noticeably for many companies.
Late 1980s	Early attempts by practitioner consultants to construct statements/ accounts that measure intellectual capital (Sveiby, 1988).
Early 1990s	Initiatives systematically to measure and report on company stocks of intellectual capital to external parties (e.g Celemi & Skandia; SCSI, 1995) In 1990, Skadia AFS appoints Leif Edvinsson "Director of intellectual capital". This is the first time that the role of managing intellectual capital is elevated to a position of formal status and given an air of corporate legitimacy Kaplan and Norton introduce the concept of a balanced scorecard (1992). The scorecard evolved around the premise that "what you measure is what you get".
Mid 1990s	Nonaka and Takeuchi (1995) present their highly influential work on "the knowledge creating company". Although the book concentrates on "knowledge", the distinction between

	knowledge and intellectual capital is sufficiently fine as to make the book relevant to those with a pure focus on intellectual capital. Celemi's Tango simulation tool was launched in 1994. Tango is the first widely marketed product to enable executive education on the importance of intangibles.
	Also in 1994, a supplement to Skandia's annual report was produced which focused on presenting an evaluation of the company's stock of intellectual capital. "Visualizing intellectual capital" generated a great deal of interest from other companies seeking to follow Skandia's lead (Edvinsson, 1997)
	Another sensation was caused in 1995 when Celemi used a "knowledge audit" to offer a detailed assessment of the state of its intellectual capital
	Pioneers of the intellectual capital movement published bestselling books on the topic (Kaplan and Norton, 1996; Edvinsson and Malone, 1997; Sveiby 1997). Edvinsson and Malone's work, in particular, is very much about the process and the "how" of measuring intellectual capital
Late 1990s	Intellectual capital became a popular topic with researchers and academic conference, working papers, and other publications find an audience. An increasing number of large-scale projects (e.g. the MERITUM project; Danish; Stockholm) commenced which aimed, in part, to introduce some academic rigour into research on intellectual capital.
1999	The OECD convened an international symposium in Amsterdam on intellectual capital.
2000	European Commission's constituted a High Level Expert Group on the Intangible Economy
2001-2003	Research projects Prism and Meritum/E*Know-net funded by the European Commission and these gave Meritum Guidelines on ICR

2002	International Conference in Madrid (Autonomous University Madrid Spanish Government + OECD + European Commission)
2002-2003	Official Study for the European Commission on the measurement of intangible assets (Ferrara + NewYork+ Melbourne)
1997-2003	Danish Guidelines on Intellectual Capital Reporting as a result of a Government-driven project
2002-04	Various documents on intangibles by the UK Department of Trade and Industry
2003	Letter on Intangible Economy signed by the UK, German and French Governments
2004	International Conference in Helsinki (Sept.) + OECD Forum in Paris (Oct.)
2004	German Guidelines on Intellectual Capital Reporting by the Ministry of Labour
June 2004	The Japanese Government issued a White Paper about making economic policy in the knowledge era with strong emphasis on intangibles and intellectual capital reporting
April 2005	A new policy by the city's Pudong New Area in recognition of human resources as capital contribution up to a maximum of 35% of the enterprise's registered capital, and a report and filing system for enterprise annual reviews (for both domestic and foreign co's)
2004-05	High Level Expert Group set up by the DG Research of the European Commission with the task of producing an official report on Intellectual Capital Reporting especially for research-based SMEs
2005	Action Plan of the European Commission on business-related services with strong recommendation to these companies to prepare an intangibles-based report

June 2005	World Bank organized a Conference on "Intellectual Capital for Communities in the Knowledge Economy: Nations, Regions and Cities" held in Paris
20-22 Oct. 2005	OECD held an International Policy Conference on Intellectual Assets in conjunction with the University of Ferrara (www.ferraraonintangibles.net)

Guidelines on Intellectual Capital statements

1. International Federation of Accountants (IFAC) – Study no. 7 (1998)
2. Danish Agency for Trade and Industry (DATI) Guidelines (2000, but new edition 2003)
3. Nordika Project Guidelines (2001)
4. Meritum Project Guidelines (2002)
5. "Intellectus Model" (Spain) (2003)
6. German Guidelines (2004)
7. Japanese Guidelines (2005)
8. Other documents deal with some aspects of Intellectual Capital reports, but without focussing on them (e.g., GRI, EFQM, ISO).

2.3 Definition of Intellectual Capital

Though the concept of intellectual capital (Intellectual Capital) has received much attention for more than a decade, there is a lack of consensus on its components and definitions. There is little agreement and much confusion regarding the definition of Intellectual Capital (Marr, 2005, p. xiv). Intellectual Capital is a multi-disciplinary concept and the understanding of it varies across different business-related disciplines. The concept was developed to deal with specific sets of issues and problems. According to Chatzkel (2002), all definitions are valid and it is up to the user to select the definition that works best to meet any particular sets of needs. Pioneering Intellectual Capital models originated mainly from Scandinavia and North America. Haanes and Lowendahl (1997) claim that the intellect of an organization exists at two levels the individual and the organizational level. On the individual level, intellectual capital includes knowledge, skills and aptitudes. On the

organizational level, intellectual capital includes client specific databases, technology, routines, methods, procedures and organizational culture.

With steady progress in the field of Intellectual Capital its definition has evolved over time and the different dimensions of Intellectual Capital have assumed greater proportions and significance. Now the various components of Intellectual capital are used to define this concept and it tends to have physical existence in the firm too. Going back the dateline the different definitions proposed by different researchers have been given below.

Stewart coined the term Intellectual Capital. He gave the definition as: *Intellectual Capital is the sum of all the knowledge that all the employees of a company have and which gives it a competitive advantage. In other words, it is intellectual material – knowledge, information, intellectual property, experience – which may be resorted to in order to create wealth* (Stewart, 1998, p. 7).

Intellectual Capital, defined in its simplest terms is the *knowledge which generates value*, (Petty and Guthrie, 2000). There are many more such definitions that researchers have designated to this concept. Kaufmann and Schneider (2004) have identified over 45 different ways of defining Intellectual Capital, including studies such as Brooking, Andriessen, Bueno, Viedma, the Meritum Project, the Intellect Club, Allee and Saint Onge.

Another well-known definition proposed by Klein and Prusak (1994): '*intellectual capital is intellectual material that has been formalized, captured and leveraged to produce a higher-valued asset*'.

Hall (1992) makes a distinction between intellectual capital as assets and intellectual capital as skills, where *assets are formalized and captured intellectual capital* (e.g. patents, trademarks, copyright, contracts, and data-bases) *and skills or competencies are tacit knowledge* (e.g. expertise of employees, suppliers, and distributors).

According to Edvinsson and Malone (1997, p. 3), intellectual capital '*is information, knowledge applied to work to create value*'. In this definition, they stress on the value creating capacity of intellectual capital.

Mouritsen (1998, p. 462) argues that intellectual capital is a matter of '*broad organizational knowledge, unique to a firm, which allows it constantly to adapt to changing conditions*'.

Another definition is *'Knowledge that can be converted into value.'* (1996; Leif Edvinsson, Skandia, Pat Sullivan, European Management Journal, vol. 14).

Intellectual capital may further be defined by drawing clues from the basic universally accepted definition given to intangible assets by the International Accounting Standards. *'Intangible assets are non-monetary assets without physical substance that are held for use in the production or supply of goods or services, for rentals to others, or for administrative purposes: (a) that are identifiable; (b) that are controlled by an enterprise as a result of past events; and (c) from which future economic benefits are expected to flow to the enterprise* (IAS 38).'

(http://www.iasc.org.uk/frame/cen2_138.htm)

This refers to patents, licenses, trademarks, and copyrights. Additionally, investment in IT infrastructure and goodwill in the case of a legal transfer can be described as intangible assets. In the knowledge management field the term 'intangible asset' is understood within a broader context.

Itami (1991) indicates that "*Intangible Assets are invisible assets that include a wide range of activities such as technology, consumer trust, brand image, corporate culture and management skills.*"

Hall (1992) considers that "*intangible assets are value drivers that transform productive resources into value added assets.*" He split Intangible Asset into two categories:

(1) Intellectual property (IP); and

(2) Knowledge assets.

Intangible Asset drives capability differentials, which in turn drive sustainable competitive advantage.

Smith (1994) defined IAs as: *Intangible assets are all the elements of a business enterprise that exist in addition to working capital and tangible assets.* They are the elements, after working capital and tangible assets that make the business work and are often the primary contributors to the earning power of the enterprise. Their existence is dependent on the presence, or expectation, of earnings.

Brooking (1997, p. 13) identified Intellectual Capital as "*market assets,*" "*human-centered assets,*" "*intellectual property assets,*" and "*infrastructure assets*" that

when combined with an organization's other productive resources will eventually lead to value creation.

Edvinsson (1997, p. 372) opined that *Intellectual Capital is not an objective thing, but is a relationship issue and a debt item, which is borrowed from the customers and employees.* By combining Intellectual Capital with these items, an organization can become more productive.

Bontis (1998) considered that *Intellectual Capital possesses intellectual attributes that can contribute value of a firm.* Edvinsson and Bontis also provided that *Intellectual Capital can be categorized into three kinds of Intellectual Capital – human, organizational and customer,* similar to those of Brooking.

Boudreau and Ramstad (1997) considered that *Intellectual Capital is closely related to human resource management that is needed by the organization to provide the necessary impetus for future development and growth.*

Davenport and Prusak (1997) related *Intellectual Capital with technology, technological changes, and things associated with the management of information technology (IT).* The ability of an organization that can utilize technology to manage and process information will be the one that has the capability to employ Intellectual Capital into good use. Similarly, Stewart (1997, p. x) related Intellectual Capital with "*the management of information technology that can be put to use to create wealth.*"

Nahapiet and Ghoshal (1998, p. 245) referred to IAs as "*knowledge and knowing capability of a social collectivity, such as an organization, intellectual community or professional practice.*"

Sullivan (2000, p. 5) defined intangibles as "*. . . knowledge that can be converted into profit.*"

Lev (2001, p. 5) considered that "*an intangible asset is a claim to future benefits and it does not have physical substance.*" He also provided a new definition of assets to exclude financial assets (for example, equities or bonds) from its scope. He stated that IAs consist of innovation, human capital, organisational capital, knowledge, etc. that can be divided into three sub-categories: IP, separately identifiable IAs, and non-separately identifiable IAs.

Daum (2002) indicated that *intangibles are characterized by a set of attributes, and they can bring in economic benefits rather quickly, and they often show network*

effects. Hence, the definition of intangibles by Daum is influenced by Lev (2001) in at least two respects. First, intangibles are the result of the network effect. Second, intangible cannot stand by itself, and hence, any benefits derived from the use of intangibles cannot be reliably measured.

Rastogi (2003, p. 230) stated that Intellectual Capital is the result of the "*collaborative effort among the firm's human and social capital, and knowledge management.*" This definition is similar to Lev (2001) and Daum (2002) in the sense that Intellectual Capital does not exist on its own but is the result of the network effect.

Mouritsen et al. (2004) indicated that Intellectual Capital *mobilizes "things" such as employees, customers, IT, managerial work and knowledge.* They added, "*Intellectual Capital cannot stand by itself as it merely provides a mechanism that allows the various assets to be bonded together in the productive process of the firm.*"

On the accounting policy (standard setter) perspective, IASB (2004b) IAS 38 (revised) defines an identifiable Intangible Asset as a "*non-monetary asset without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.*" IAS 38 defines an Intangible Asset that includes expenditure on advertising, training, start-up, and research and development activities. The range of activities that can be treated as IAs is wide but all are expected to generate future benefits (cash flows), and these could result from activities such as advertising (marketing), distributing, research and development, human resource expenditures, and values that come from brand names, copyrights, covenants not to compete, franchises, future interests, licenses, operating rights, patents, record masters, secret processes, trademarks, and trade names. These items that can be considered as Intellectual Capital by the IAS 38 are similar to those advocated by the non-accounting group.

The German Schmalenbach Society Working Group on "Intangible assets in accounting" (Arbeiskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fur Betriebswirtschaft e.V., 2002) defined Intellectual Capital as *immaterial items with non-monetary values without physical appearance.* It follows that *Intellectual Capital (Intangible Asset) have been defined to include expenditures on advertising (marketing), training, start-up, research and development activities,*

human resource expenditures, organizational structure and values that come from brand names, copyrights, covenants not to compete, franchises, future interests, licenses, operating rights, patents, record masters, secret processes, trademarks and trade names. However, from the recognition and treatment criteria of IAs from the accounting perspective, most of the above mentioned items should be expensed as they were incurred and that, only those that can be quantitatively identifiable or externally generated should be capitalized in the balance sheet.

2.4 Review of various terms used to define Intellectual Capital in firms

A study by Kaufmann and Schneider (2004) provides a good account of the variety of terms and definitions for each kind of Intangible Asset in their literature review from 1997 to 2003. This study was for a limited time period and it did not focus on intangibles covered by the accounting literature. Some of the terms used for Intellectual Capital (Intangible Asset), and their definitions are contained in Table 2.2 and Table 2.3

Tables 2.2 and 2.3 show the wide variety of terms used by various researchers which mean almost similar things. These terms include "Intangible Assets," "Intangibles," "Intangible Resources," "Intellectual Capital," "Intellectual Property," "Intellectual Knowledge" and "Immaterial Values". There is a term "Immaterial Values" which means non-monetary value and without physical appearance. It sounds very similar to "Intellectual Capital" or "Intangible Asset" but is used by researchers/bodies in countries that do not follow UK/US-based accounting systems (e.g. Germany, Sweden and France).

2.4.1 Definition of Intellectual Capital for this research

For this research Intellectual Capital has been defined as "***All the Intangible and invisible assets that contribute to creation of value for the firm and all it stakeholders not only in the present but also for the future***."

Table 2.2 – Use of terms and definitions of Intellectual Capital and Intangible Assets

Authors	Term/concept	Definition
Itami (1991)	Invisible assets	"Intangible assets are invisible assets that include a wide range of activities such as technology, consumer trust, brand image, corporate culture, and management.
Hall (1992, p.136)	Intangible asset	"Intangible assets are value drivers that transform productive resources into value-added assets".
Smith (1994)	Intellectual property	"Intangible assets are all the elements of a business enterprise that exist in addition to working capital and tangible assets. They are the elements, after working capital and tangible assets, that make the business work and are often the primary contributors to the earning power of the enterprise. Their existence is dependent on the presence, or expectation, of earnings".
Brooking (1997)	Intellectual capital	Intellectual Capital as "market assets, human-centered assets, intellectual property assets, and infrastructure assets".
Edvinsson and Malone (1997, p.22)	Intellectual capital and intangible assets.	"Intangible assets are those that have no physical existence but are still of value to the company".
Sveiby (1997, p.10)	Immaterial values	Intellectual Capital has three dimensions (employee competence, internal structure and external structure).

Nahapiet and Ghoshal (1998, 245)	Intellectual capital	IAs as "knowledge and knowing capability of a social collectivity, such as an organization, intellectual community or professional practice".
Stewart (1998, p. XI)	Intellectual capital	Intellectual Capital is intellectual material – knowledge, information, intellectual property Experience – that can be put to use to create wealth – collective brainpower.
Granstrand (1999)	Intellectual property	"IP is property directly related to the creativity, knowledge and the identity of an individual".
Brennan and Connell (2000)	Intellectual capital	"Knowledge-based equity of a company".
Sullivan (2000)	Intellectual capital	"Intellectual Capital is knowledge that can be converted into profit".
Heisig et al. (2001)	Intellectual capital	"Intellectual Capital is valuable, yet invisible"
Lev (2001, p.5)	Intangibles	"An intangible asset is a claim to future benefit that does not have a physical or financial (a stock or a bond) embodiement" "Assets exclude financial assets" IA cannot stand alone.
Gu and Lev (2001, p.14)	Intangibles	Intangibles are defined by their value drivers (RD, advertising, IT, capital expenditure, and human resources practices).
FASB NN (2001)	Intangible assets	"Intangible assets are non current, nonfinancial claims to future benefits that lack a physical or financial term".
Petty and Guthrie (2000, p.158)	Intellectual capital	Intellectual Capital is indicative of the economic value of two categories (organization and human capital) of IA of a company.

Pablos (2003, p.63).	Intellectual capital	"A broad definition of intellectual capital states that it is the difference between the company's market value and its book value. Knowledge based resources that contribute to the sustained competitive advantage of the firm from intellectual capital".
Rastogi (2003, p.230)	Intellectual capital	"Intellectual Capital may properly be viewed as the holistic or meta-level capability of an enterprise to co-ordinate, orchestrate, and deploy its knowledge resources towards creating value in pursuit of its future vision".
Mouritsen et al. (2004, p.48)	Intellectual capital	Intellectual Capital mobilizes 'things' such as employees, customers, IT, managerial work and knowledge. Intellectual Capital cannot stand by itself as it is merely provides a mechanism that allows the various assets to be bonded together in the productive process of the firm.
IASB (2004b, p.2)	Intangible assets	An identifiable IA as a "non-monetary asset without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes".

Source: Taken from Kaufmann and Schneider (2004, Table II)

Table 2.3 – No definitions but indications of existence of Intellectual Capital.

Authors	Term/concept	Indication
Hall (1992, p.136)	Intangible resources	Intangible Assets are value driven that transform productive resources into value added assets.
Boudreau and Ramstad (1997)	Intellectual capital	Intellectual Capital is closely related to human resource management.
Edvinsson (1997, p.372)	Intellectual capital	"Intellectual Capital is not an objective thing, but is a relationship issue and a debt item".
Bontis (1998)	Intellectual capital	Intellectual Capital possesses intellectual attributes that can contribute value of a firm.
Bontis et al, (1999, p.397)	Intangible resources Intellectual resources	Intellectual Capital is quite simply the collection of intangible capital as a subcategory and their lows, intangible resources is any factor that contributes to the value generating processes of the company[1].
Arbeitskreis Rechnungswesen der Schmalenbach-Gesellschaft fur Betriebswirtschaft e.V. (2001)	Immaterielle Werte im Immaterial values	Non-monetary value without physical appearance.

Kriegbaum (2001)	Immaterial values	Physical not embodied financial goods. Their nature is not monetary, and they are an economic advantage for the company[1].
Daum (2002)+	Intangible assets and intellectual	Intangibles are characterized by a set of capital attributes, and they can bring in economic benefits rather quickly, and they often show network effects Consider IA to include human capital, RD, advertising and knowledge[1].
Funk (2003)	Intangibles	Intangibles relate to management credibility, innovativeness, brand identity, ability to attract talents, research leadership, social and environmental responsibility.
Note: [1]Modification of indications.		
Source: Taken from Kaufmann and Schneider (2004, Table II)		

2.5 Classification of intellectual capital

Intellectual Capital is more accurately understood and studied as a combination of its constituent elements rather than a process, activity or a phenomenon. For a more comprehensive understanding of Intellectual Capital a number of frameworks have been developed. These are all designed to classify and study the elements of Intellectual Capital with more and more accuracy and reliability.

Some of the more popular frameworks are the Balanced Scorecard by Kaplan and Norton (1992), the classifications of resources by Haanes and Lowendahl (1997), the Intangible Asset Monitor by Sveiby (1997), the Skandia Value Scheme by Edvinsson and Malone (1997) and the three categories of "Knowledge" by the Danish Confederation of Trade Unions (DCTU, 1999). These frameworks have been developed independently and at different times over the past decade. Many of them are conceptually similar. However, the major distinctions are the basic assumptions and classifications that led to different levels of aggregation of the Intellectual Capital elements.

Kaufmann and Schneider (2004) reviewed the major literature on intangibles from 1997 to 2003 and found that most of the publications highlighting the concept of Intellectual Capital still lacked a theoretical foundation. Even for the few that do to some extent either their basis seemed to be quite abstract (Grant, 1997) or they talked about theories that were on too broad a context that failed to address how it would percolate down to practical matters (Johansson et al., 2001; Mouritsen et al., 2002; Wood, 2003; Diefenbach (2006). All these indicated that till date, though a lot of effort has gone in to define Intellectual Capital, a universally acceptable clear and precise definition that encompasses all the attributes of the concept systematically is yet to get formulated.

The reasons why it has been difficult to define what Intellectual Capital is are plenty. Primary among them is that Intellectual Capital is being governed by huge number of indicators and factors which all need to be included on broad parameters while defining Intellectual Capital. Keeping this magnanimity of the concept in mind, it seems more appropriate to classify the various aspect of Intellectual Capital instead of

trying to give precise definition to it. This is because classification is less stringent than definition.

Nevertheless, classification also implies defining it (Grojer, 2001, p. 698). Categorization enables one to order the systematic organization of a magnitude of possibilities into a set of class (group) consisting of a coherent number of items. Numerous groups, accounting professions and researchers have attempted to categorize intangibles.

Table 2.4 – Few Frameworks for Classifying Intellectual Capital

Developed by	Frame work	Classification
Sveiby (1998; 1997)	The intangible asset monitor.	Internal structure Competence of personnel External structure.
Kaplan and Norton (1992)	The balanced scorecard	Internal processes perspective Customer perspective Learning and growth perspective Financial perspective.
	Classification of resource	Competence Relational
Edvinsson & Malone (1997)	Skandia Value Scheme	Human capital and Structural Capital

Table 2.4 shows a few pioneering frameworks developed towards classifying Intellectual Capital. Many of the frameworks have the same three broad classification categories human, customer and structural capital. However, these classification schemes are presented differently in each of the models.

A few more prominent classifications of Intellectual Capital have been discussed in Table 2.5
Edvinsson and Malone (1997), Bontis (1998), and Sullivan (1998) have also adopted the similar three group categorizations of Sveiby, but they termed them as:

(1) Human Capital;

(2) Organisational Capital; and

(3) Customer Capital, respectively.

Even though Stewart (1998) accepted the classification of Sveiby, he renamed them as: Human Capital; Structural Capital; and Customer Capital, respectively.

Table 2.5 – Categorizations of Intellectual Capital by authors, groups or bodies

Authors	Term/concept	Categorization
Redovisnings Radet (1995)	Immaterial values	Capitalized cost of research and development and similar projects, concessions, patents, licences, trademarks, and similar rights, tenancy agreements and similar rights, goodwill, payments on accounts
LBK(1996)	Immaterial values	Development costs, concessions, patents, licences, trademarks, similar rights and goodwill
Brooking (1997)	Intellectual capital	Market assets, human-centered assets, intellectual property assets and infrastructure assets.
Edvinsson (1997)	Intellectual capital	Human capital, organizational capital and customer capital
Edvinsson and Malone (1997)		Intellectual capital and Human capital and structural capital Intangible assets.
Roos and Roos (1997)	Intellectual resources	Human capital and structural capital
Roos et al. (1997)	Intellectual resources	Human capital and structural capital
Skandia Insurance Services (1997)	Intellectual capital	Human capital and structural capital
Sveiby (1997)	Immaterial values	Internal structure,external structure&personnel competence
Stewart (1998)	Intellectual capital	Human capital, structural capital and customer capital
Redovisnings Radet (1998)	Immaterial values	RD, concessions, patents, licences, trademarks, and similar rights and assets, prepaid taxes and goodwill
Bontis et al. (1999)	Intangible resources	Human capital and structural capital intellectual capital as a subcategory

Canibano et al. (2000)	Intangibles	Human capital, structural capital and relational capital
Granstrand (1999)	Intellectual property	Creativity, knowledge, identity of individuals
Andriessen and Tiessen (2000)	Intangibles	Assets and endowments, skills and tacit knowledge, primary and management processes, technology and explicit knowledge, and collective values and norms
Brennan and Connell (2000)	Intellectual capital	Internal structure, external structure and human capital
Harrison and Sullivan (2000)	Intellectual capital	Human capital, intellectual assets that include IP
Michalisin et al. (2000)	Intangible resources	Reputation, know-how, organization structure[a]
Sanchez et al. (2000)	Intangibles	Human capital, structural capital and relational capital
Chan et al. (2001)	No term	RD, advertising
Arbeitskreis Immaterielle Werte im	Immaterial values	Human capital,innovation capital,customer capital, supplier capital, investor capital, process capital and location capital
FASB NN (2001)	Intangible assets	Technology, customer, market, workforce, contract organization and statutory-based assets.
Gunther (2001)	Immaterial values	Internal structure, external structure & employee competence Advertising, IT, capital expenditures and human resources practices
Lev (2001)	Intangibles	Discovery, organizational practices and human resources
Marr and Schiuma (2001)	Knowledge assets	Stakeholder resources and structural resources
MERITUM (2002)	Intangibles and Intellectual capital	Human resources, structural resources & relational resources
Bontis (2002)	Intangible capital	Human capital, structured capital and relational capital
Mouritsen et al. (2002)	Intellectual capital	Human capital, organizational capital and customer capital
Petty and Guthrie (2000)	Intellectual capital	Human capital and organizational (structural) capital
Marr et al. (2003)	Knowledge assets	Strategy, influencing behavior and external validation
Pablos (2003)	Intellectual capital	Human capital, organizational

		capital and relational capital
IASB (2004b) (first issued in 1998)	Intangible assets	Advertising (marketing), distributing, training (human Resources), start-up, RD, brands. copyrights, covenants not to complete, franchise, future interests, licences, operating Rights, patents, record masters, secret processes and trademarks (trade names)
Note: [a]Modification of indications		

Sullivan (2000) also adopted the three categories of Intellectual Capital proposed by Sveiby, but indicated that by undertaking various processes, these Intellectual Capital would lead to intellectual assets.

Petty and Guthrie (2000) used only two out of the three categories of Intellectual Capital of Sveiby (human capital and organizational (structural) capital). Mouritsen et al. (2002), and Pablos (2003) also used the same three-category classifications of Intellectual Capital as per Sveiby, however, Pablos termed "Customer Capital" as "Relational Capital." Lev (2001) stated that IAs consist of:

(1) Innovation (discovery or knowledge);

(2) Human Resources; and

(3) Organizational Practices (capital).

These three categories could be divided into three sub-categories: IP, separately identifiable IAs, and non-separately identifiable IAs. Gu and Lev (2001, p. 14) simplified the study of IAs by grouping them into five sub-groups:

(1) Research and Development;

(2) Advertising;

(3) Capital Expenditures;

(4) Information Systems; and

(5) Technology Acquisition.

They focussed on measurement issues and how intangibles could influence the capital market and investors.

Bukh et al. (2001) compared various taxonomies of Intellectual Capital and came out with three things in common:

(1) Activities connected to employees;

(2) Tasks, processes and structures; and

(3) Services and value-added activities connected to customers, very much similar to the three categories of Intellectual Capital of Sveiby (1997).

The Measuring Intangibles to Understand and Improve Innovation Management – MERITUM (2002) was constituted to develop guidelines to understand the measurement of intangibles within the firm. The MERITUM Project adopted the Intellectual Capital methodology of Sveiby (1997) in many ways including the classification of Intellectual Capital into three categories:

(1) Human resources;

(2) Structural resources; and

(3) Relational resources.

Analysis of the classifications of Intellectual Capital indicated that by and large, various researchers have adopted the three categorization-human, structure and customers of Sveiby (1997), suggesting that the categorization of Intellectual Capital is consistent. But Kaufmann and Schneider (2004) concluded in their study that the categorization of Intellectual Capital by these authors was ambiguous and a little too broad. On the accounting standard setting perspective, two groups of purely normative researchers on Intangible Asset came out with similar outcomes. They are the FASB and the German Schmalenbach SocietyWorking Group on "IntangibleAssets in Accounting" (Arbeiskreis "Immaterielle Werte im Rechnungswesen" der Schmalenbach-Gesellschaft fur Betriebswirtschaft eV).

The FASB NN (2001) categorized Intangible Asset into seven categories for financial reporting:

(1) Technology;

(2) Customer;

(3) Market;

(4) Workforce;

(5) Contract;

(6) Organization; and

(7) Statutory-based assets.

The German Schmalenbach Working Group (Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V., 2001, 2002) also grouped Intangible Asset into seven categories:

(1) Innovation Capital;

(2) Human Capital;

(3) Customer Capital;

(4) Supplier Capital;

(5) Investor Capital;

(6) Process Capital; and

(7) Location Capital.

Both the groups work on Intangible Assets is very useful. Particularly the FASB approach as it provides a clearer description of items, lesser overlap of groups, and even provided examples on Intangible Asset and events leading to the creation of Intangible Asset, and as a result, provide more concrete and complete perspective on Intangible Asset that can be applied in the business context (Kaufmann and Schneider, 2004, Figure 1). Marr et al. (2003) reviewed the literature on the measurement of IAs, and identified that Intellectual Capital can be categorized into three main categories:

(1) Strategy;

(2) Influencing Behaviour; and

(3) External Validation.

Marr and Chatzkel (2004) find that the researchers on intangibles often classify them into:

1. Human capital (employees' skills, talent and knowledge);
2. Information capital (information systems, databases & computer systems) and
3. Organization capital (culture, leadership, employee alignment, teamwork).

They conclude that in general Intangible Assets constitute a collection of knowledge, intellectual and revenue generating resources.

Maines et al. (2003) categorize research on intangibles into three areas, research related to:

(1) Current financial reporting for Intangible Assets;

(2) Disclosures about Intangible Assets; and

(3) Recognition of Intangible Assets;

These are the same three categories of Intellectual Capital as proposed by Sveiby in1997.

Analysis of the attempts in rationalizing Intellectual Capital through categorization indicates that researchers have used several terms to refer to Intellectual Capital, and there is a tendency towards the harmonization of the classification of Intellectual Capital. Most researchers have adopted the three categorization-human, structure and customers (relation) of Sveiby (1997). This finding is consistent to Marr and Adams (2004) where they found that there has been a general convergence towards a three-grouped framework consisting of:

(1) Human capital;

(2) Organizational (or structural) capital; and

(3) Rrelational capital; based on Sveiby (1997), MERITUM (2002), and Bontis (2002).

The above discussion indicates that the rationalization of Intellectual Capital using the categorization approach better describes what Intellectual Capital is as compared to using the definition approach. There are two reasons for this. First, as Intellectual Capital is mostly invisible it is much harder to define compared to many other items. Second, the study of Intellectual Capital is relatively new and evolving, and it is hard to isolate the range of activities associated with Intellectual Capital that can be included in it and defined. However, even if we adopt the classification approach, issues still remain. There is still no cohesive methodology and objective used in classifying Intellectual Capital. Moreover, inconsistency and overlap of classes and sub-classes occurs frequently and there is no agreed classification schema across studies of Intellectual Capital. What we need is a system to streamline the various categories and terms into manageable categories (classes).

2.5.1 Classification of Intellectual Capital used by this research

For this research the classification for Intellectual Capital is considered as Human Capital , Structural Capital , Customer (External/Relation) Capital because it has been found to the most widely accepted and used model by the various researchers across the world.

Human capital relates to the skill-sets, aptitudes and attitudes of employees and they are widely reported (Garcia-Meca, 2006). Even though many authors consider that human capital is part of Intellectual Capital, technically and legally, human capital cannot be owned by a firm unlike other forms of Intellectual Capital such as structural capital (Edvinsson and Malone, 1997; Stewart, 1998).

Organizational or structural capital is the most complex – and has undergone several changes, but recently, some researchers (Marr et al., 2003) have suggested that it could include culture, innovation and process.

Relational capital relates to the organizational relationships with all its stakeholders.

2.6 Historical Review of Intellectual Capital Reporting

Philosophically though the concept of Intellectual capital caught attention of managers all over the world way back in the 80's, **the first intellectual capital report was finally published in 1994. Its "inventor" was Leif Edvinsson at Skandia and its genesis marked a huge milestone in the field of intellectual capital.** Skandia's pioneering and path breaking report encouraged many more firms to take on the challenge of reporting Intellectual Capital. This was all taken up without the existence of intellectual capital guidelines put forth by regulatory bodies or any other normalizing or certifying agency. Thus Intellectual Capital reporting has seen extensive proliferation along with a great pace of improvement in content and format. A multitude of Intellectual Capital report types have taken birth based on a wide variety of models and measures proposed by different researchers.

Intellectual Capital reports are mostly published as supplementary reports to the annual financial reports of the firm. In order to capture the real intent behind all the Intellectual Capital reporting that has occurred till date it is important to explore the content and format of all Intellectual Capital reports and a few researchers have tried to do this.

Some studies that have attempted to explore the Intellectual Capital practices of firms through an analysis of company annual reports are Guthrie and Petty (2000) in Australia, Brennan (2001) in Ireland, Bozzolan et al. (2003) in Italy, and Abeysekera and Guthrie (2004, 2005) in their study of Sri Lanka.

A brief discussion on Intellectual Capital reports as they have evolved over the past two decades would allow a few subtle pointers to be drawn. These will examine the different types of Intellectual Capital reports cursorily as they exist today followed by detailed discussion of each type later.

- **Skandia's first intellectual capital report was focused on intellectual capital as a whole.** It addressed organizational hidden values, indicators for the future, a vision of the satisfied customer, the search for success factors, quality of the system, people and technology, competency, renewal and growth, the path forward and a glossary of terms related to intellectual capital. The first intellectual capital report had 22 pages and subsequent ones had seven and 11 pages respectively. This first report also described a new reporting model called the Skandia Navigator. This famous tool was designed to describe and measure the intellectual capital of an organization. The Navigator models visualized value components that made up intellectual capital along with the methods of managing them and reporting on their development. It was designed to provide a balanced picture of the financial and intellectual capital. Its greatest advantage was "the balanced total picture it provided of the operations" (Skandia, 1994, p. 15).
- **The second milestone often thought of as the second generation of intellectual capital reporting happened in 1997. In this year, a much bigger number of firms published their first intellectual capital report.** These firms were mainly from Denmark, Sweden, Spain and India. The experience of European intellectual capital reports is well covered in the literature: the Danish case (Danish Agency for Trade and Industry, 1997. 2000, 2001), the Norwegian case (Roberts, 1999), the Spanish case (Ordo´n˜ez de Pablos, 2002a, b, 2004) and the Swedish case (Celemi, 1995; Sveiby, 1997).
- One of the pioneering studies of Intellectual Capital Disclosures was carried out by Guthrie et al. (1999). It was presented at an OECD Symposium on measuring and reporting intellectual capital. The findings of this study were later published with further improvements in 2000. While the authors used the classification of Intellectual Capital proposed by Sveiby in 1997, they renamed the categories of Intellectual Capital as internal capital (instead of

internal structure), external capital (instead of external structure), and human capital (instead of employee competence). Several authors studying Intellectual Capital Disclosures followed suit in Ireland (Brennan, 2001), Italy (Bozzolan et al., 2003), and Sri Lanka (Abeysekera and Guthrie, 2004, 2005).

The above mentioned studies have highlighted an important phenomenon in their respective countries with regard to Intellectual Capital Disclosures made by firms. They confirmed that external capital (i.e. external relations such as with customers) is the most reported Intellectual Capital related item in most annual reports. This emphasis on external capital with a focus on customers once again highlighted the way in which firms create value. They emphasized the creation of economic capital (investments, etc) over social capital and human capital. Bukh (2003) supported this approach to value creation, providing a theoretical justification for its perpetuation. Bukh argued that value creation through Intellectual Capital should be analyzed with an understanding of who the customers are, what they need, and how value is created for the customers to obtain competitive advantage.

With the understanding on Intellectual Capital gaining firmer grounds, there have been attempts to formalize the reporting on Intellectual Capital. To give it a structure, a few guidelines have been constituted which could help give a more generic and universally acceptable form to Intellectual Capital reporting. Corporate reporting and internal management systems needed to provide a more holistic view that enables investors and managers to evaluate the performance of the total value process of the firm. The reporting statement necessarily needed a set of rules that allowed users to understand and appreciate the content of the Intellectual Capital statement in such a way that they could make an independent judgment of its content (Nielsen et al., 2006). For the intangible inclusive management and financial systems to be effective, the systems needed to be constantly adjusting to changes that take place on a continuous basis (e.g. technology, R&D, human capital, customers, etc.). The systems also required an IP management system that helped to monitor and oversee all available patents, determine new patents use, and to keep track of the corresponding "value extraction" projects and programs. In summative, the new intangible inclusive reporting system consisted of two parts:

(i) Internal management system that understood and mobilized the relationships between invested and available resources (e.g. human resource, technology, organizational procedures, etc.); and

(ii) External management system which helped to generate sustainable value from the systems and processes for all its stakeholders.

2.7 Intellectual Capital Reporting as a means to understand value chain

For an effective reporting system of Intellectual Capital there is a need for understanding of the underlying value chain system. This value chain is necessary for three reasons.

i. First, users of financial statements have an imperfect picture of the value created by the firm. This value is attributed to its Intellectual Capital but is not articulated correctly due to problems related to its identification, recognition and measurement (Garcia-Meca, 2006). This implies that the traditional financial statements are not suitable for the reporting of value creation through Intellectual Capital.

ii. Second, Intellectual Capital merely provides a mechanism that allows the various assets (customers, IT, development costs, etc.) to be united together in the productive process of the firm, value creation is viewed as a value chain process (Lev, 2001, 2002b; Mouritsen et al.,2001). Thus Intellectual Capital is an imperative to understand the value creation in the firm.

iii. Third, a better understanding of the value chain enables the firm to systematically monitor the performance and investment opportunities of the firm's entire value creation system. Hence accurate identification of Intellectual capital facilitates clearer demarcation of value creating activities in a firm.

2.8 Efforts towards improving Intellectual Capital Reporting

Today, many executives recognize the importance of Intellectual Capital as a principal driver of firm performance and a core differentiator (see, e.g., Marr, 2006; Carlucci et al., 2004; Marr, 2004b). But not only are the enterprises seeing the value in Intellectual Capital; the governments are also recognizing the importance of it (Marr, 2004c).

The European Union, for example, aims for their membership countries to invest a minimum of three percent of their GDP into research and development initiatives in order to grow their Intellectual Capital and become more competitive in the knowledge economy.

In the United Kingdom, for example, Prime Minister Tony Blair wrote in a Government White Paper that creativity and inventiveness is the greatest source of economic success but that too many firms have failed to put enough emphasis on R&D and developing skills. Patricia Hewitt, the UK's Secretary of State for Trade and Industry, added in a report that increasingly it is the intangible factors that underpin innovation and the best-performing businesses.

An increasing number of firms start to report more of the intangible aspects of their business, even without the force of regulations. This trend is especially observable in Europe with various initiatives by the European Commission (e.g., projects such as METITUM, E*KNOW NET, PRISM).

Another example is presented by the Danish Department of Trade and Industry, which produced guidelines of how companies can produce Intellectual Capital reports.

In Austria the government has passed a law that all universities have to report on their Intellectual Capital, in the UK companies will be forced to produce an Operating and Financial Review outlining many intangible elements of their business, and countries as diverse as Iceland, Germany, and Spain have started their own initiatives.

At the same time accounting guidelines are being amended and standards are being questioned and reviewed to reflect the growing importance on intangible elements. With the introduction of the International Accounting Standards more emphasis will be placed on accounting for intangible components and stricter compliance rules force companies to report on other intangible aspects of their performance.

Leading software companies such as SAP, Hyperion, Oracle, 4GHI and PeopleSoft are developing applications to address this, and even governments are beginning to measure the Intellectual Capital of cities, regions, and countries. Also, many consulting companies have discovered different areas of this increasing awareness and interest in Intellectual Capital and now offer their services. *PricewaterhouseCoopers*, for example, offer their services to help companies in their value reporting initiatives to increase transparency in corporate reporting, while *Watson Wyatt* offer human capital audits. In recent reports or marketing material from different consulting firms

this trend is apparent: *Accenture* writes that today's economy depends on the ability of companies to create, capture, and leverage Intellectual Capital faster than the competition. *Cap Gemini Ernst and Young* believes that intangibles are the key drivers for competitive advantage and *KPMG* states that most general business risks derive from intangibles and organizations therefore need to manage their intangibles very carefully. *PricewaterhouseCoopers* writes that, in a globalized world, the Intellectual Capital in any organization becomes essential and its correct distribution at all organizational levels requires the best strategy, integrated solutions, processes and technology.

2.9 Research initiatives towards Effective Business Reporting through Intellectual Capital Reporting

The need for Intellectual Capital reporting has its roots in the need for Effective Business Reporting. The table 2.5 highlights how different initiatives have ensured that some or most elements of Intellectual Capital are reported along with the Annual Reports to ensure the business reporting is effective.

Table 2.6 thus summarizes briefly sixteen prominent initiatives that aim to increase the disclosure of Effective Business Reporting information at the Global, National and Company level. Notably, fifteen of the sixteen initiatives reviewed in Table 2.5 are voluntary (V), whilst only one is mandatory (M); a trend, which illustrates that, hitherto, the approach to reporting intangibles has been largely outside the realm of regulators. Taking a spear headed approach to deal with intangibles the first European Research Technology Organisation (RTO) and the Austrian Research Centers (ARC) implemented and published two Intellectual Capital Reports for the business years of 1999 and 2000.

Table 2.6 Initiatives towards Effective Business Reporting

Initiative	Requirement	Category
Global level		
IASB Management Commentary	V	Broad based enhanced business reporting discussion
OECD Multinational Enterprise	V	Corp citizenship & sustainability
United Nations Global Compact	V	Corp citizenship & sustainability

United Nations Global Reporting Initiative	V	Corp citizenship & sustainability
National level		
Australian parliamentary inquiry into corporate responsibility and triple bottom line reporting	V	Triple bottom line and corporate citizenship and sustainability
Australian guiding principles on extended Performance management (SKE)		In draft broad based enhanced business reporting format
Austrian Universities Organisations and Studies Act	M	Intellectual capital
Danish Guideline on Intellectual Capital Reporting (MSIT)	V	Intellectual capital
German Guideline on Intellectual Capital Statement (FMEL)	V	Intellectual capital
Japanese Intellectual Based Management (METI)	V	Intellectual capital
MERITUM Guideline (EU Commission)	V	Intellectual capital
UK Operating and Financial Review (ASB)	V	Broad based enhanced report
US Enhanced Business Reporting	V	Broad based enhanced report
Consortium Company level		
Balanced scorecard (Kaplan and Norton)	V	Intellectual capital
Intangible asset monitor (Sveiby)	V	Intellectual capital
ValueReporting™ (PwC)	V	Broad based enhanced report

(From http://www.wdc-econdev.com/suggestions-for-developing.html)

2.10 Discussion of various guidelines related to Intellectual Capital Reporting

Initiatives to develop guidelines specifically related to Intangible Assets and Intellectual Capital reporting, include among others the following five, which are briefly reviewed here.

i. **The Danish guideline Intellectual Capital Statements** – The New Guideline (Mouritsen et al., 2003) was commissioned and published by the Danish Ministry of Science, Technology and Innovation. The guideline is the outcome of a multi-year project with over one hundred Danish organizations volunteering to participate in the production of Intellectual Capital statements and report on the performance and composition of their intangible, knowledge resources.

ii. **The German Guideline Intellectual Capital Statement** – made in Germany was issued by the German Federal Ministry of Economics and Labour (FMEL) in 2004. The guideline acknowledges the growing importance of knowledge and innovation to economic growth and

seeks to help organizations portray and evaluate intangible corporate values in a structured manner (FMEL, 2004, p. 7). It acknowledges that traditional controlling and management tools cannot provide information on whether an organization's desired targets are being achieved or not.

iii. **The Austrian University Organisation and Studies Act** came into effect for all state Universities in Austria on 1 January 2004. It mandates Intellectual Capital reporting for all universities as a basis for performance evaluation, and aims to restructure the educational and legal framework of universities to ensure public budgets are put on a new, more performance-oriented basis. The Intellectual Capital reports are used for external reporting purposes to publicly account for the use of tax money, publish the university's performance, and to inform budgetary reimbursement and performance-oriented budget allocation from the Federal Ministry and private institutions; and internal management and control purposes to assist in performance evaluation enabling more efficient use of resources, and improved management decision making and forecasting (Ricceri, 2008).

iv. **The Japanese Guideline for Disclosure of Intellectual Assets Based Management** was released by the Ministry of Economy, Trade and Industry (METI) in October 2005. The Guideline aims to assist corporations in preparing Intellectual Assets reports. The guideline advocates sustainability and stakeholder engagement, and aims to help managers develop a deeper understanding of the role Intellectual Assets plays in organisational value creation.

v. Finally, the **Australian Guiding Principles on Extended Performance Management – A Guide to Better Managing, Measuring and Reporting Knowledge Intensive Organisational Resources** was issued in draft format by the Society for Knowledge Economics (SKE) (Boedker, 2005). The guiding principles encourage organizations to adopt a more strategic and inclusive approach to managing, measuring and reporting intangible resources which are human, structural or relational. The guiding principles since 2006

inform the Australasian Reporting Award on Knowledge Capital, to which a growing number of Australian organizations have been submitting reports.

2.11 Review of the guidelines for Intellectual Capital Reporting

Since Europe has initiated and done some of the most exhaustive work in the field of Intellectual Capital reporting, this review mostly comprises their work. The institutions that headed the developments in Intellectual Capital reporting are as follows: Danish Ministry of Science, Technology and Innovation (DMSTI), the European Commission (EC), the European Federation of Financial Analysts Societies (EFFAS), the German Federal Ministry of Economics and Labor, the Measuring Intangibles to Understand and Improve Innovation Management Project (MERITUM Project), the Organization for Economic Co-operation and Development (OECD), United Kingdom Department of Trade and Industry (DTI), Financial Accounting Standards Board (FASB), the International Accounting Standards Board (IASB), the Japan Ministry of Economy, Trade and Industry (METI), Enhanced Business Reporting (EBR), Value Chain Scoreboard™, Intellectual Capital Rating™, Australian Society of Certified Practicing Accountants, the Society of Management Accountants of Canada and the International Federation of Accountants and Value Measurement and Reporting Collaborative (VMRC).

A few pointers emerge after an analysis of these various agencies that have tried to identify measure and report Intellectual Capital. Guidelines are voluntary and characteristically contain headings for the content of Intellectual Capital reporting. The universal recognition is that Intellectual Capital reporting should have a futuristic approach and effect. There are typically no business model reference frameworks for Intellectual Capital reporting under most of these guidelines. Though there is a need, but there is little differentiation between Intellectual Capital resources and Intellectual Capital activities and processes. Generally speaking most of these guidelines do not impose strict enforcements of standards and reporting and are still voluntary. However Japanese METI guidelines have still prescribed thorough account of details that are required in Intellectual Capital reports. Recently the need for identification of pertinent information to be published in Intellectual Capital reports has been

recognized and worked upon by few like the MERITUM Project and the IASB Management Commentary proposal. **There is an implicit hint in all practices that essentially business models are the best deciders of the reporting format to be applied but the more the specificity to every business model the more difficult is the development of universally applicable guidelines and frameworks which is the endeavor of all such guideline.** Except the VMRC proposal there is no recognition of the need for a final mapping and reconciliation of Intellectual Capital report is with the financial reports.

2.12 A Few Major Research Projects that have worked on Intellectual Capital reporting

2.12.1. MERITUM Project: Several of the empirical academic research studies form part of an ongoing project investigating Intellectual Capital called MERITUM measuring intangibles to understand and improve innovation management. The project is financially supported by the European Commission. **The principle aim of the project to produce guidelines, to measure and disclose intangibles for the purpose of, improving decision making for managers and stakeholders.** The project has four main objectives:

i. establish a classification scheme for intangibles;
ii. document company management and control systems for identifying European best practices in measuring intangibles;
iii. assess the relevance of intangibles in the functioning of capital markets by means of market data analysis; and
iv. produce guidelines for the measurement and reporting of intangibles.

The MERITUM guidelines are based on best practices observed among 80 European firms and have been validated through a Delphi study. Its first chapter develops the conceptual framework, containing precise definitions of the terminology used. Thereafter, the report is divided into two main parts, a model for Intellectual Capital management and a set of recommendations on how to prepare Intellectual Capital reports. The model for Intellectual Capital management proposed by the MERITUM guidelines comprises the following three phases:

– **Identification:** After clearly articulating the 'vision of the firm', this phase consists of identifying the 'critical intangibles' required to attain the firm's strategic objectives. Next, a set of 'intangible resources' and 'intangible activities' are attached to each critical intangible, by means of which the latter will be attained and the process will be monitored. As a result, a 'network of intangibles' emerges, providing the firm with a clear picture of current intangible resources, which have to be developed in the future and describes the activities which need to be undertaken in order to attain the strategic objectives.

– **Measurement:** This phase involves defining specific indicators to be used as a proxy measure of the different intangibles which were identified in phase 1. The guidelines explain the desirable characteristics that these indicators should hold and provide examples of good practice.

– **Action:** This phase entails the consolidation of the intangibles management system and its integration within the firm's management routines. It is a learning process that involves monitoring and evaluating the effect that the different activities have on the firm's intangible resources, critical intangibles and strategic objectives.

In the second part, the MERITUM guidelines describe how to prepare an Intellectual Capital report, comprising three sections as shown in Figure 2.1

The three major highlights of the project are as follows:

i. *First,* the 'vision of the firm', i.e., a narrative of the firm's strategic objectives and critical intangibles.
ii. *Second,* a 'summary of intangible resources and activities', which represents a disclosure of the activities to be developed in order to attain the strategic objectives. and
iii. *Third,* the 'system of indicators', which allow the reader to assess how well the company is doing in attaining its objectives.

The guidelines recommend classification of different intangible resources and activities, as well as their corresponding indicators, under the following three categories, which jointly conform the Intellectual Capital of the firm:

– **Human Capital:** The knowledge that employees take with them when they leave the firm. It includes the knowledge, skills, experiences and abilities of people.

– **Structural Capital:** The knowledge that stays within the firm at the end of the working day. It comprises organizational routines, procedures, systems, cultures and databases.

– **Relational Capital:** All resources linked to the external relationships of the firm.

It comprises human and structural capitals involved with the company's relations with stakeholders (investors, creditors, customers, suppliers, etc.) plus the perceptions they hold about the company.

Finally, the guidelines conclude with a set of recommendations on how to collect information, who should prepare the information in the company and the frequency of reporting.

2.12.2. E*KNOW-NET

Early during the E*KNOW-NET project, an improved version of the MERITUM guidelines was produced (Meritum 2002). In this second edition of the guidelines, earlier inconsistencies were detected and addressed. The revised guidelines were published in English and Spanish through sponsorship by Vodaphone Foundation.

2.12.3 Danish Agency for Trade and Industry Guidelines

The Danish Agency for Trade and Industry (DATI, 1998; 1999) sponsored the preparation of a report on various attempts, at the company level, to prepare "Intellectual Capital accounts", based on the experience of ten Nordic companies. The Danish guidelines describe how to prepare an 'Intellectual Capital statement' in practice. They drew on the experience of seventeen Danish companies which participated in the project by means of preparing two sets of Intellectual Capital statements under the supervision and assistance of the Danish guidelines' task force. Thus, they included in-depth examples from the Intellectual Capital statements prepared by these firms. The guidelines emphasized that the Intellectual Capital statement is an integral part of knowledge management within a company, but does not specifically describe a model for knowledge management.

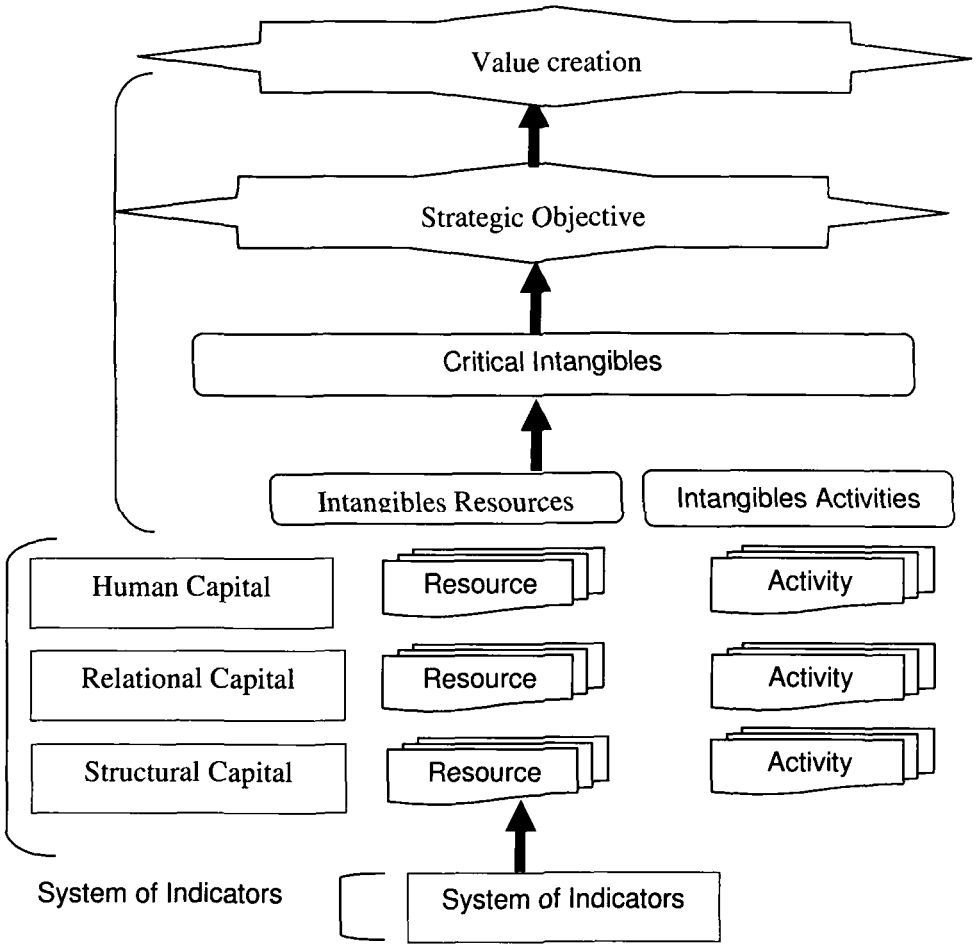


Figure 2.1 – A schema for the Presentation of Intellectual Capital Reports as per the Meritum Guidelines

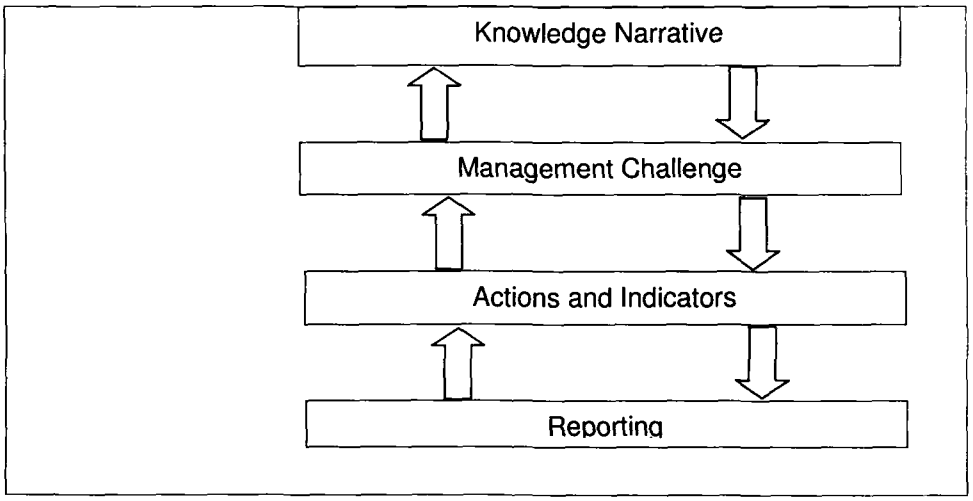


Figure 2.2- Process for preparing Intellectual Capital statements

(Source: Danish guidelines)

The Danish guidelines propose a process for preparing Intellectual Capital statements comprising the following four phases (Figure 2.2):

- **Knowledge Narrative:** This *first* phase involves defining the mission of the firm, the 'use value' (i.e., the value for the final customer) of the product or service offered by the firm and the conditions of production, with special emphasis on the system of knowledge and competencies.

- **Management Challenges:** This *second* phase consists of identification of a set of 'management challenges' which are to be addressed in order to develop and realize the ambition defined in the first phase. In other words, it involves translating the company's knowledge narrative into specific management challenges. More importantly, it involves a selection of an action plan among the different strategic alternatives available to implement the knowledge narrative.

– **Actions and Indicators:** The objective of the *third* phase is to develop detailed actions attached to each management challenge, as well as specific indicators to measure the impact of each of those actions. With respect to the classification of these actions and indicators, the Danish guidelines are very flexible, proposing some examples, but not a unique classification method.

– **Reporting:** The *fourth* and final phase involves the preparation of the Intellectual Capital statement, which is composed of text, figures and illustrations. The text serves to communicate the company's knowledge narrative, its management challenges and actions, as well as to provide a general description of the company. The figures present a detailed picture of the different management challenges, the actions attached to them and the specific indicators used to measure the impact of those actions. The illustrations are specially meant to communicate the style and cultural identity of the company.

According to the Danish guidelines, it is a good practice to report on the accounting policies used and to include a statement of an auditor in the Intellectual Capital statement. Finally, in its appendixes, it provides some detailed examples, a survey of indicators that could be used in an Intellectual Capital statement, a summary of the differences between Intellectual Capital statements and social statements, and a glossary of terminology.

Further initiatives to consider the scope for, and the practical implications of, developing better and more comprehensive Intellectual Capital indicators were taken in 1998 by the Danish government through the organisation of a pilot project with participation of some two dozen Danish firms (see Bukh et al., 1999; forthcoming; Mouritsen et al., 1999; Mouritsen, forthcoming; Nikolaj et al., 1999; Hoogendoorn, 1999).

In Norway, the Government sponsored research in 1992 to develop a competence capital model which has evolved into an ISO-type certification process including Intellectual Capital (Enqvist, 1999; Lovdal and Roberts, 1999).

2.13 Reviews of formats used to report Intellectual Capital

European firms have more or less dominated the idea and concept of Intellectual Capital reporting. But lately all the other countries have followed suit and started to identify and report intangibles. A review of all such reporting being done all over the world till date can give a detailed insight into the intricacies of the reporting models, frameworks and practices.

2.13.1 Format of European Reports

Generally speaking intellectual capital reports published in Europe follow a common basic structure. The report is divided into three major sections or chapters. The first chapter describes the business model, mission, vision, values and major activities of the firm. The second chapter analyses knowledge management processes, activities, models and investments in the firm. The third and final chapter focuses on the intellectual capital. It begins with the firm's own definition of intellectual capital and is then divided into three subsections that address the three specific components of intellectual capital: human capital, relational capital and structural capital. Each component is first defined and all activities devoted to creation and renewal of that specific component of intellectual capital are described under it. Finally double-entry tables are built to report the results of their measurements. It is significant to note that all the Intellectual capital components are measured through indicators. Indicators are measures of processes and systems that govern all the activities of the firm. As has been discussed before there is a lack of uniformly accepted official guidelines to measure intellectual capital, these indicators too are not standardized.

Nevertheless there are some consistently reported "basic" areas covered in most reports. These can be identified, considered and included for the overall standardized report of Intellectual Capital.

Some of these areas for the different components of Intellectual Capital have been given below.

Human Capital:

- Employee profile;
- Staff turnover;
- Education;
- Commitment and motivation;
- Ttraining; and
- Results.

Relational capital:

- Client profile;
- Customers, image and stakeholders;
- Diffusion and networking; and
- Intensity, collaboration and connectivity.

Structural capital:

- General infrastructure:
- Knowledge-based infrastructure;
- Innovation;
- Quality and improvement projects;
- Customer support; and
- Administrative processes.

These indicators have evolved over time to include and capture the different perspectives of the firm. They are still in the process of improvement to be as accurate and as concise as possible to include the greatest possible details on the firm.

In order to avoid the tedious task of detailed Intellectual Capital reporting using frameworks and indicators in some cases the intellectual capital report is an independent report that complements the information gathered in the financial statements. In other cases, the report is part of the company's annual report.

2.13.2 Other types of Intellectual Capital reporting practices

In order to capture the real intent behind all the Intellectual Capital reporting that has occurred till date it is important to explore the content and format of all Intellectual Capital reports published as supplementary reports to the annual financial reports of the firm. A few researchers have tried to analyze these reports to get a better understanding on the need and significance of Intellectual Capital reporting. Some of the studies that have attempted to explore the Intellectual Capital practices of firms through an analysis of company annual reports are Guthrie and Petty (2000) in Australia, Brennan (2001) in Ireland, Bozzolan et al. (2003) in Italy, and Abeysekera and Guthrie (2004, 2005) in their study of Sri Lanka.

An analysis of the literature reveals the following five major Intellectual Capital frameworks:

(1) Structures holding intellectual assets (Sveiby, 1997, pp. 93, 11-12, 165), which focuses on intellectual assets;

(2) Capital holding intellectual items (Edvinsson, 1997; Edvinsson and Malone, 1998; Roos et al., 1997; Edvinsson and Sullivan, 1996), which has been modified by others (Stewart, 1997, pp. 229-246; Roos and Roos, 1997), and where intellectual capital is viewed in relation to intellectual assets;

(3) Assets representing intellectual capital (Brooking, 1996, pp. 13-15, p, 129; 1999, pp. 153-155), which focuses on intellectual assets;

(4) Strategic root and measurement root (Roos et al., 1997, p. 15), which focuses on the role of intellectual capital; and, finally,

(5) A combination of assets and capital representing intellectual capital (SMAC, 1998, p. 14; IFAC, 1998, p. 7; Dzinkowski, 2000).

2.13 3 Format of Indian Reports

The first intellectual capital report in India was published in 1997 (Pablos 2005). A firm named Trisys Communication has pioneered in framing Intellectual Capital reports. Among its first clients were the three big Indian companies - **Balrampur Chini Mills Limited, Reliance Industries Limited** and **Shree Cement Limited**. These firms published their first Intellectual Capital reports in 1997. Now four more companies - **Krebs Biochemicals, Mirc Electronics, and Shrachi securities, Navneet publications** have started publishing their Intellectual Capital reports through Trisys.

Another firm Bizworth India Private Limited has also just started its consulting services in this field in 2005. **Mind Tree, e4e.com, Make my trip, Volvo, PSI data systems, TVS finance and services, Web18, Macmillan and Tata Chemicals** are some of its clients. It uses the Intellectual Capital Rating™ (2007) framework as proposed by Edvinsson. It is the Indian business partnet of Intellectual Capital Sweden AB.

Infosys reports its intangible assets in its annual reports through goodwill, patents and Value Reporting since last 5 years.

Thus there are three distinct types of Intellectual Capital reports prepared in India:

- One is more like a descriptive report as a supplement to annual financial reports done by Trisys Communications.
- The other is like Intellectual Capital Rating™ report conducted by Bizworth.
- The third is the intangible asset reporting done by Infosys.

All the three types of reports published in India measure similar assets but present them very differently. In order to make Intellectual Capital reporting uniform and generally applicable to most of the industries, the features of all these types of reports need to be collated to generate more of a uniform reporting format.

The Indian intellectual capital reports prepared by most of the firms except the client of Bizworth India Pvt Ltd do not focus on the business model, values, mission and vision and/or knowledge management issues, as it is the case of European intellectual capital reports. It presents a "narrative" style, that is to say, it basically describes a firm's intellectual capital and analyses its components without focusing extensively on specific indicators that measure these components. This is a major distinctive feature of Indian reports. In contrast with European intellectual capital reports, Indian reports do not combine a "narrative" and "quantifying" style. All Indian intellectual capital reports analyzed in this case study constitute independent documents that complement the annual report. Their length is much larger than European reports.
Finally one of the firms in the case study – Reliance Industries Limited – even created a specific term for investor relations (the investor capital) and provides an in-depth analysis of this capital.

2.13.4 IC Rating™ in India

Bizworth India Pvt Ltd uses the Intellectual Capital Rating tool which is designed to measure – quantitatively and qualitatively - more than 250 parameters of a firm within the Conceptual Framework. These parameters have been carefully distilled out of an initial list of 1000. For example, the parameters cover:

- Intellectual Property: patents, licenses, in-house developed software
- Process: Methods, manuals, IT systems
- Employees: competence, motivation, loyalty, incentives
- Management qualities, abilities, management methods
- Network business partners and other external connections, contributing to fulfill company needs
- Brand; awareness, attention, differentiation
- Customers: image, relationships, loyalty, potential

In addition the parameters are measured from three perspectives

- Effectiveness – how effective is the performance of these parameters in the current scenario.
- Risk – What is the risk that the effectiveness will decrease.
- Renewal – role of the current initiatives to improve the effectiveness of the parameters.

The effectiveness of the Intellectual Capital as well as the efforts to renew and develop are rated in a tenth graded scale ranging from "AAA" down to "D". The risk of a decreasing effectiveness of the Intellectual Capital is rated in four levels, ranging from negligible risk "-" to a very high risk "RRR".

Intellectual Capital rating is thus a supportive document published for the firm to understand its assets and future position better.

Most of the Intellectual Capital reports published in India are as a supplement to the annual report. This annual reports have been the primary source documents for all Intellectual Capital researches till date. This research has its own limitations and purviews. These can be articulated more clearly on the basis of some researches focused on trying to understand the efficacy of annual report based Intellectual Capital research.

The nature and extent of disclosures are more systematic and formalized in the western countries and do not have formal structures in the eastern economies. This research delves deep into how Intellectual Capital reporting has been done both in the form of formal reports and in the form of subtle discloures in the Annual reports in Indian firms. There is an attempt to draw a parallel with the existing models and frameworks to get a more formalized and generic framework which may be used for all Indian companies.

2.14 Studying Voluntary disclosures

Despite these benefits some large companies may choose not to disclose any information on intangibles in their annual reports. However there are regional differences to voluntary disclosures. The Nordic companies in general and Swedish companies in specific are regarded as precursors when it comes to compensating the lack of information on intangible assets in financial statements by *voluntarily* disclosing this type of non-financial information (Vandemaele *et al.* 2005; Bukh *et al.*, 2006; Arvidsson, 2003).

2.14.1 Review of studies on Voluntary Disclosures on Intellectual Capital in India

In India, only a few studies have been carried out to analyze the Intellectual Capital reporting by Indian firms. Pablos (2005) found that the Intellectual Capital reports in

India do not focus on the business model, values, mission and vision and/or knowledge management issues. The reports were presented in a narrative style. The level of disclosure has been found to be low. Kamath (2008) found that across the countries and the industries, the levels of disclosures are found to be low. Kamath (2008) in another study on pharmaceutical industry found that in spite of growing importance and efficiency in the utilization of the intellectual resources in the Indian pharmaceutical industry, the impact of same on the financial performance of the industry was found missing. Joshi and Ubha (2009) undertook content analysis of Intellectual Capital disclosures of the Indian software industry and concluded that Intellectual Capital reporting has not received any preference or priority for the mentors of the Indian corporations.

Their was another exploratory and empirical study of Intellectual Capital disclosures of top twenty companies in pharmaceutical sector in the year 2009, selected on the basis of market capitalisation. The annual reports of the selected companies were collected from the Ludhiana Stock Exchange, Punjab (India) / respective websites of various companies. The use of annual reports have already been validated by earlier researches for accessibility, consistency, timeliness and finally it being an audited and comprehensive document; perceived to be more reliable than other documents (Chander, 1992; Guthrie and Petty, 2000; Brenan, 2001; Olsson, 2001; Bontis, 2003; Bozzolan *et al.*, 2003; Abeysekera and Guthrie, 2005; Pablos, 2005). Modified Intangible Assets Monitor was used to capture the disclosure of elements of Intellectual Capital framework. The previous researches also supported the use of same index (Petty & Guthrie, 2000; Brennan, 2001; Bozzolan et al, 2003). This technique used quantitative content analysis for calculation of disclosure index for corporate social and Intellectual Capital disclosures. (Yi and Davey, 2010;Joshi *et al* 2010).

The five point scale 0-4 was applied in the following ways

0 - No disclosures,

1 - Narrative disclosures,

2 -Quantitative disclosures,

3- Monetary disclosures,

4- Formula based/ comparative disclosures in statement form.

Inter coder test of reliability was conducted and found to be satisfactory. Further, mean score was calculated to find out the inter company variation in disclosures. $\chi 2$ (Chi Square) test was used to test the significance of variation in disclosure of intellectual capital.

Though top 20 listed companies of pharmaceutical sector in India have been taken in the study but Intellectual Capital disclosures vary among companies significantly (as disclosed by $\chi 2$). The computed figures of Intellectual Capital revealed that the huge value of Intellectual Capital was unreported in the balance sheet. The study inferred inconsistency with regards to disclosures and valuation of Intellectual Capital in 13 companies which was 65% of the sample. Sun pharma, Cipla and Glaxosmithkline were found to be making minimum disclosures but amazingly enjoying high market premiums, on the contrary ten other companies who were disclosing their Intellectual Capital extensively had low market prices which thus were not truly reflecting this crucial asset of theirs. The overall mean of Intellectual Capital disclosure 18.35 out of the total expected score of 96 was drastically low. Category- wise, highest disclosure is found in respect of Customer (relational) Capital 18.78 with rank 1, followed by employee competence at 14 with rank 2.

Organizational (structural) Capital was the least disclosed category. As 90% of the sample companies are not disclosing trademarks, copyrights, undoubtedly, there is understatement of worth of the pharmaceutical companies in India. Because of lack of standardized accounting guidelines on this vital asset, resources worth the thousands of millions go unreported in the annual reports thwarting the basic motive of true and fair view of financial statements.

This has led to realization that Annual reports can be used as a reliable source and medium for Intellectual capital

2.15 Annual Reports as resource documents for voluntary disclosure of Intellectual Capital

Several studies point out that annual report users are requesting more and more reliable information related to key drivers of future company value creation capabilities (Maines et al., 2002; Beattie, 2000; Healy and Palepu, 2001; Abeysekera and Guthrie, 2004). Many companies have responded to this request. Indeed, studies have identified an upward trend in the annual reporting of non-financial information

and accounting narratives related to value drivers (Williams, 2001; Abeysekera and Guthrie, 2004; Vandemaele et al., 2005).

The annual report is an important document because it is the principal means for corporate communication of activities and intentions to stakeholders (Holland and Boon Foo, 2003) and because it signals what is important to the reporting company through the reporting mechanism (Guthrie and Petty, 2000; April et al., 2003; Guthrie et al., 2004). Sophisticated users, such as analysts and investors, draw on annual report information in their work, to, for example, provide earnings forecasts and to justify recommendations to investors. This does not only relate to financial information, but also to non-financial information and narrative reporting (Garcia-Meca, 2005; Rutherford, 2005).

Quite a few studies on Intellectual Capital Disclosure have used annual reports as a source document for their research (Guthrie and Petty, 2000; Brennan, 2001; Bozzolan et al., 2003; Abeysekera and Guthrie, 2004, 2005). The reason for this is that annual reports are regularly produced and, seemingly, present a historical account of the firm, and its management's thoughts, in a comprehensive and compact manner (Niemark, 1995, pp. 100-101).

However, a fact that is not acknowledged in most of the studies on Intellectual Capital Disclosures that use annual reports as their source document is that annual reports may not reflect the reality of the firm very objectively. Past research based on empirical findings by Williams in 2001 also indicated that there is no strong relationship between the amount of Intellectual Capital disclosed in annual reports of a firm and its market value. This is because most of the listed firms use the annual report as a publicity tool. Empirical evidences also suggest that annual reports provide a special opportunity for firms to convey and showcase more than simply financial information (Cameron and Guthrie, 1993). It is an opportunity to illustrate leadership and vision of the firm in such a way that it echoes the values and ethos of the firm (Niemark, 1995, pp. 100-101; Clack worthy, 2000), and also helps to establish a strong public image (Guthrie and Petty, 2000). Hence, annual reports are used by firms to establish a desired level of confidence and trust in the minds of their stakeholders, rather than to simply communicate the objective reality of the firm through disclosure of its actual Intellectual Capital or in other words its actual future worth.

However since supplements to annual reports or the Intellectual Capital Rating™ are the only two ways the Intellectual Capital reports are prepared in India the research methodology would be more of a content analysis of the different types of reports that are published along with the Annual Reports. This will help in mapping the similarities and differences that exist in them and glaring loopholes if any. It is important that Intellectual Capital reports published in its different forms are free from conspicuous errors in order to make them action worthy futuristic documents certainly helping the firm place itself from clearly vis-a vis its future objectives and position.

2.16 Use of Annual reports to study disclosure practices in India

As per a study by Pintu Sarkar in 2011, the information disclosed in the annual reports of companies today is undoubtedly far more exhaustive and useful than what was being reported earlier.

Disclosures are presently made in many forms to address to the needs of shareholders, institutional investors, trade unions and policymakers. As they currently stand, the compliance with the statutory disclosure requirements is a general phenomenon among Indian companies and financial reports provide a glimpse of past performance. However, many Indian companies have taken the initiative to disclose some additional information keeping in view the diversified needs of the users.

Study conducted by V K Vasal (2002) on Accounting and Reporting for Intangibles covers conceptual issues in accounting for intangibles and practices of reporting intangibles. Gyan Chandra (2002) has tried to establish a consensus between preparers and auditors of CAR. Dr Banerjee (2001) has made contribution in the field of disclosure in corporate financial reporting practices in India. Dr Dave (2000) in his study has covered Accounting Standards & their relevance to corporate reporting practices in Indian corporate sector. Dr Manichavasam and S Sivarama (1999) concluded that annual reports are too difficult for many investors from their study of disclosure under sec 217(2A) of the companies act. Vassal again in his study extended corporate reporting of Indian public sector concluded that there is consensus between preparers and users of corporate reports.

Shu Lun Wong (1996) has made investigation into readability of annual reports using fog index. Giner, Cervera and Arce M (1994) in their study have covered disclosure

of segmental reporting in Spain and various incentives to disclose segmental information in CAR. M Sakthivelmurugan (1989) has done work in the field of Corporate Reporting in India and has studied comparison between statutory disclosure and non statutory disclosures over past 5 years. Dr Banerjee (2001) in his study concluded that present regulations are sufficient for disclosure in CAR.

Dr Datta (1999) said that disclosure of public sector is better than private sector in his paper on transparency in accounting disclosure practices. Rajiv Handa (1995) suggested that CAR reports should also provide information to potential investor, analyst and government. John K Courtis (1995) in his study of Disclosure Redundancy in Annual Reports quoted "the two studies conducted by Singhvi & Desai (1971) and Buzby (1974) adopted a disclosure scoring device which has its roots in the weighted disclosure index methodology of Coperlands and Fredricks (1968). These early annual reports disclosure studies required researchers' judgment in applying a four point scale depending on the subjectivity assessed extent to which the item had been disclosed. Later studies avoided scorer variability regarding judgment about the extent of item disclosure. As an expedient, dichotomous disclosure indices (disclosure being present or not present) became the norm in annual report studies of this type." Dr Ibrahim Mohd and Dr B M Agrawal (1994) recommended strict adherence to rules and regulations and suggested amendment in companies act have to be done so that validity and usefulness of CAR is increased.

2.17 Limitations of research methods used to understand Intellectual Capital Disclosures

Most ICD studies use only one research method. However, since every research method has its own strengths and limitations, it is recommended that research methods be combined so that, by complementing the weaknesses of each other, the validity and reliability of results can be improved. Statistical techniques as a research method have been used to a limited extent in ICD literature (Bozzolan et al., 2003) and this limited use of statistical techniques could be because several authors describe ICD as an interplay between qualitative and quantitative information (Goh and Lim, 2004; Petty and Guthrie, 2000).

Recent research into ICD practices have highlighted several issues that need to be resolved in order for ICD research to be improved. And have brought to light some interesting observations.

i. Firstly, there is a lack of coherence between the various definitions of Intellectual Capital and ICD hence coding is a difficult task.

ii. Second, there is a need for combining more than one complementary research methods to improve the relevance and reliability of results along with the future credibility of ICD studies.

iii. Third and finally, the theoretical underpinning of ICD studies needs to be strengthened. While both positivist and critical theories can certainly contribute to this process, it is argued that inter-country studies would benefit from using the political economy of accounting perspective in order to initiate a much more critical examination of such results.

This research is a thus a mix of qualitative summative directed content analysis used to develop case studies to analyse the reporting and management of Intellectual Capital in Indian companies.

2.18 Understanding how disclosures influence market valuation

The need to report Intangible Assets and Intellectual Capital has been discussed at length in Chapter 1 but creating concrete linkages between value created and information disclosed is still an arduous task. High-quality disclosures may facilitate communication between management and the equity market, thereby reducing mis-valuation and managerial myopia arising from information asymmetry and short-run market pressures. Therefore, managers with favorable (yet private) information about future earnings have strong incentives to improve disclosure quality to convey such information to investors. However still there are diverse views on the actual impact of real and true disclosures about operations of the firms which are not aimed at hyping stocks but are genuinely related to keeping the stakeholders more informed about the firm and its operations.

Benefits like lower cost of capital, improved communication with stakeholders and increased competitiveness due to identification of value-creation drivers are examples

of well-sought benefits that management teams who report regularly and externally on their intangible assets are found to experience (Bismuth and Tojo, 2008).

2.18.1 The Skandia Value Scheme

One of the first companies to report the "intangibles" as business assets and correlate it to creation of value,was Skandia AFS, a Swedish financial services company. In 1995, a supplement to Skandia's annual report used for the first time the word "Intellectual Capital", instead of the accounting term "intangible assets" (Edvinsson and Malone, 1997, p. 54). The Skandia Value Scheme is shown in Figure 2.3

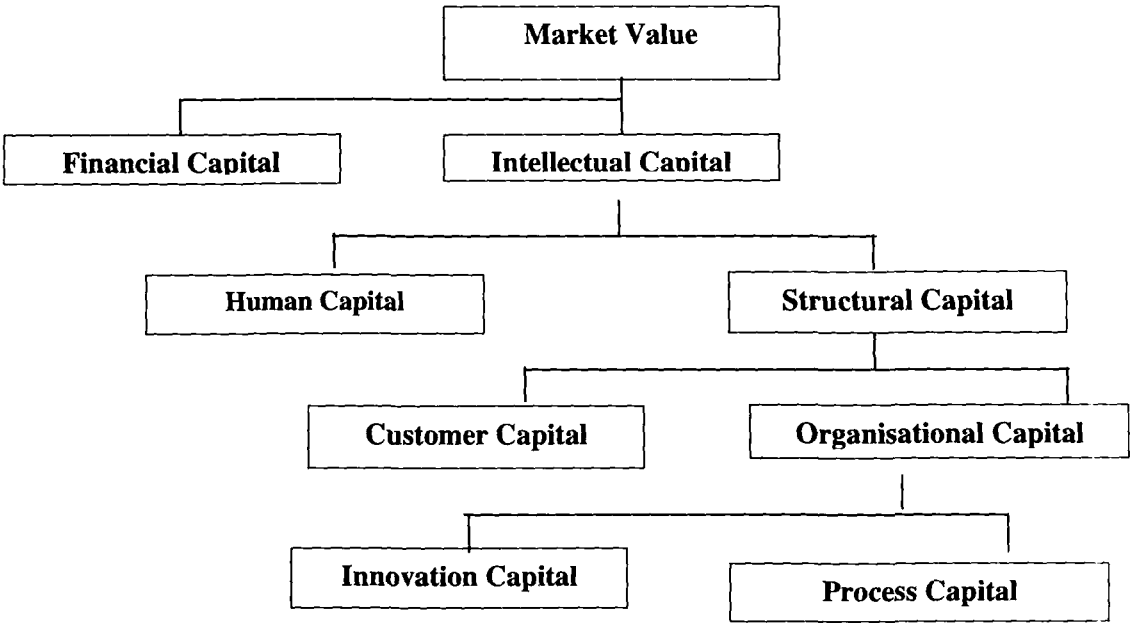


Figure 2.3 - The Skandia value scheme by Edvinsson

The Skandia Value Scheme, which was developed by Edvinsson in 1993, takes the market value of a firm as a combination of financial capital (primarily including all tangible assets) and the Intellectual Capital (including Intangible Assets). This model divides Intellectual Capital into Human Capital and Structural Capital. Structural Capital has been further segregated into Customer and Organizational capital focusing on external and internal components of organizational structure respectively. The external focus emphasizes a valuation of the customer relationships. The internal focus concentrates on innovation and process capital. Innovation capital is the novelty

that creates success in the future and comprises intellectual assets and intellectual property. Process capital characterizes the know-how (for example, manuals and best practices) in the company accumulated through best practices.

2.18.2 Ramboll's Holistic Company Model

As with other Nordic models, Ramboll's holistic company model as shown in figure 2.4 consists of key areas within which certain performance indicators are managed and how they translate into concrete performance indicators which could be reported in financial terms.. These key areas lead to three sets of results – customer, employee and societal – and all three combine to produce the financial results. The key areas are values and management, strategic processes, human resources, structural resources and consulting services. For example, the performance indicators for human resources are staff composition, staff turnover and competence building. These key performance indicators (KPIs) are then further subdivided. The ones for competence building, for example, are supplementary training expenses excluding salary, the amount spent per course participant and the hours contributed by employees. The table 2.7provides a list of possible human, organizational and customer capital indicators, but measurements will always be company-specific.

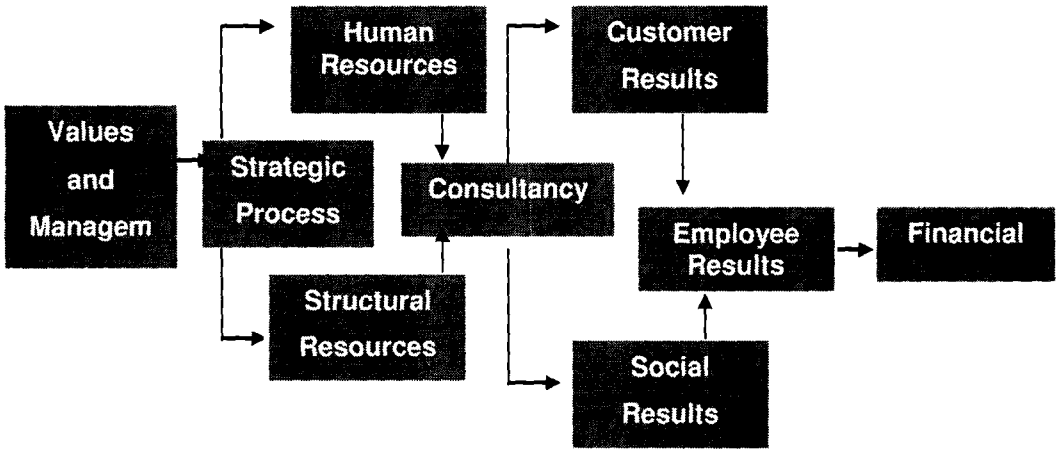


Figure 2.4 - Ramboll's holistic company model

Table 2.7 – Ramboll's holistic company model list of indicators

Human capital indicators	Organisational capital indicators	Customer capital indicators
Revenue generated per employee	Income per R&D expense	Growth in sales volume
	Individual computer links to Database	Revenues per customer by Junior staff
Number of senior positions filled	Number of times database has been consulted	Ratio of sales to repeat customers
Recruitment, development and Training spend per employee	Upgrades of database	Customer satisfaction
Average length of service of staff	Contributions to database	Effectiveness of ad campaign
Staff turnover	Upgrades of SOPs	Brand loyalty
Educational level of staff	Value of new ideas	Brand image
Staff with professional qualifications	Ratio of new ideas generated to new ideas implemented	Product returns as a ratio of sales
New ideas generated by staff	Number of new product introductions	Customer complaints
New product introductions per employee	Proportion of income from new product introductions	Reputation of company
Value added per employee	Number of patents	Proportion of customer's business that product or service represents
Post-training evaluation exercise-Benefits accrued		or customer satisfaction surveys
Proportion of revenue-generating Staff to other		
Image of company from employee's Perspective	Average length of time for product design and development	
Changes implemented due to employee	IT expenditure as a percentage of administration spend	

2.19 Studies Conducted to Analyse the Impact of Intellectual Capital on Company's Financial Performance and Market Value.

A number of studies have been conducted to examine the relationship between Intellectual Capital, market value and financial performance. A few of them have analytically examined the separate effects of capital employed efficiency, human capital efficiency, and structural capital efficiency on market value and financial performance.

2.19.1 Study by Firer and Williams

On the field of empirical research, many studies have empirically utilised VAIC as a measure of Intellectual Capital. Firer and Williams (2003) utilised the VAIC approach to measure the relationship between Intellectual Capital and traditional measures of corporate performance. They used a sample of seventy five South African public traded companies, but the empirical results failed to support any relationship between the three value added efficiency components and the three dependent variables (profitability, productivity and market value). Their findings revealed that South African companies depend mostly on their tangible resources, pay the least importance to structural capital, while on the other hand, the market seems to react negatively to firms that concentrate solely on the enhancement of human assets. Overall, the findings of Firer and Williams (2003) suggest that physical capital in South Africa remains the most significant underlying resource of corporate performance, despite efforts to increase the Intellectual Capital base of the country.

2.19.2 Study by Chen et..al

Chen et al. (2005) conducted an empirical investigation on the relationship between Intellectual Capital, market value and financial performance. They used a large sample of Taiwanese listed companies and utilised Pulic's (2000a, b) VAIC. Their study underlined the importance of Intellectual Capital in the enhancement of firm profitability and revenue growth. The empirical results proved that:

- Investors valuate higher companies with better Intellectual Capital efficiency; and

- Companies with better Intellectual Capital efficiency obtain a higher degree of profitability and revenue growth in the current and following years.

Chen et al. (2005) concluded that Intellectual Capital is indeed a significant strategic asset, since it is positively related to the firm's market value and financial performance.

2.19.3 Study by Muhammad and Ismail

Muhammad and Ismail (2009) tried to investigate the efficiency of Intellectual Capital and its performance in Malaysian financial sectors, based on data from eighteen companies for the year 2007. It was found that the banking sector was the one relying the most on Intellectual Capital, followed by companies of the insurance sector and the brokerage sector. It was also found that Intellectual Capital has a positive relationship with company performance (measured by profitability and ROA), but, on the other hand, it was discovered that in Malaysian financial sectors, market value was created more by capital employed (physical and financial) rather than Intellectual Capital. This last finding of Muhammad and Ismail (2009) was consistent with a previous study conducted in the same country over the period 2001 to 2003 (Goh, 2005), where it was found that Malaysian banks with satisfactory financial performance (measured by traditional economic measures) had low Intellectual Capital coefficients.

2.19.4 Study by Samiloglu

On another study conducted in the banking sector of Turkey, Samiloglu (2006) tried to determine whether a significant relationship between VAIC and market to book value ratio really existed. The author used data from the financial statements of banks listed in the Istanbul Stock Market over the years 1998 to 2001. The results demonstrated that there was no significant relationship between the dependent variable (MV/BV) and the independent variables (VAIC and its three components).

2.19.5 Study by Gan and Saleh

Gan and Saleh (2008), moreover, examined the relationship between Intellectual Capital and corporate performance of technology-intensive firms listed on Bursa (Malaysia), by investigating whether value creation efficiency (measured by VAIC), can be explained by market valuation, profitability, and productivity. Overall, the study of Gan and Saleh (2008) concluded that VAIC can explain profitability and productivity, but failed to explain market valuation.

2.19.6 Other studies on understanding value created by Intellectual capital

In Taiwan, Shiu (2006) found a significant positive correlation between VAIC, profitability and market valuation and a negative correlation with productivity.

Tseng and Goo (2005), in an empirical study of Taiwanese manufacturers, found a positive relationship between Intellectual Capital and corporate value.

Tan et al. (2007) used the VAIC methodology to examine data from 150 listed companies on the Singapore Stock Exchange, and concluded that:

- Intellectual Capital and company performance are positively related;
- Intellectual Capital is correlated to future company performance
- The rate of growth of a company's Intellectual Capital is positively related to the company's Performance and the contributions of Intellectual Capital to company performance differ by industry.

Appuhami (2007) investigated the impact of the value creation efficiency on investors' capital gains on shares. The author used data collected from listed companies in Thailand's stock market and utilised the VAIC approach. The empirical research found that firms' Intellectual Capital has a significant positive relationship with its investors' capital gains on shares.

In a VAIC study that was conducted in a traditional Western economy, Puntillo (2009) examined the relationship between value creation efficiency, firms' market valuation and financial performance, by using data drawn from 21 banks enlisted in the Milan Stock Exchange, Italy. Results failed to show any positive significant association between the

studied variables, except from the relation between capitals employed efficiency (a component of VAIC) and different measures of firm's performance.

In an exploratory study, Mohiuddin et al. (2006) used VAIC to measure the Intellectual Capital performance of seventeen commercial banks in Bangladesh for the period 2002 to 2004. According to their findings, all seventeen banks of the sample had relatively higher human capital efficiency than other capital efficiencies.

In Greece, Mavridis and Kyrmizoglou (2005) used data from the banking sector for the period 1996-1999 and concluded that there is a positive correlation between value added and physical capital, but especially between value added and human or Intellectual Capital.

The study by Dimitrios M., et al., attempted to investigate the relationship between Intellectual Capital, market value and financial performance of Greek listed companies that belong to four major industries of the country. The methodology adopted is the one of VAIC that has been previously utilised to other similar studies (Chen et al., 2005; Firer and Williams, 2003; Williams, 2001).It must be understood and underlined that the empirical results indicate the existence of a significant relationship between one of the three significant components of Intellectual Capital (human capital efficiency) and one of the three major indicators of financial performance (ROE). Thus, it is concluded that in the Greek business context, the development of human resources seems to be one of the most significant factors of economic success.

Stewart (1997) and Roos et al. (1997) argued that human capital can be defined as the employee's abilities to act in different situations and that it includes skills, education, experience and motivation. Hence, nurturing such human employee characteristics seems to be of vital importance for Greek companies.

Bontis (1998) conducted an empirical pilot study that explores the development of several conceptual measures and models regarding Intellectual Capital and its impact on business performance. A questionnaire that tapped into the Intellectual Capital constructs, as well as business performance within the context of the conceptual model, was developed. The questionnaire has 63 items designed to measure four constructs (three constructs relating to Intellectual Capital plus performance). The study suggested reliable, significant and

substantive causal links between dimensions of Intellectual Capital and business performance.

Using empirical analysis, Zhen et al. (1999) found that patent attributes are statistically associated with subsequent stock returns and market-to-book ratios. In general, companies that were innovating rapidly were more successful in product development and more competitive than companies that are relying on old technologies. The suggestion was that patent-based measures provided a useful tool for the investment analysis of technology and science-based enterprises.

2.20 Review of Methods used in the past to Measure Intellectual Capital

Researchers have developed various models to measure and manage intangibles, and they were constructed for different purposes. Many of these are too broadly focused and are often qualitative, and hence, fail to offer any objective measurement usefulness. Most publications on this subject still lack a theoretical foundation and practical usefulness and lack of an in-depth study of Intellectual Capital categorization and reporting. Even the few that do are either quite abstract or they talked about theories on too broad context that do not address how they relate to practical matters. For this review, measuring methods are grouped broadly under two categories namely: "Non-Dollar Valuation of Intellectual Capital" and "Dollar Valuation of Intellectual Capital". Non-Dollar Valuation of Intellectual Capital does not offer dollar valuation while Dollar Valuation of Intellectual Capital estimates the dollar values of Intellectual Capital. The following represents a selective, rather than exhaustive, list of measuring systems.

2.20.1 Categorization of Different Techniques Utilized Previously to Measure Intellectual Capital

The lack of a generally accepted methodology for valuing intangible assets has led to numerous efforts. Sveiby (2002) suggested measures have been discussed below. The measuring approaches for intangibles fall into four categories. These categories are an extension of the classifications suggested by Luthy (1998) and Williams (2000), namely:

- Direct Intellectual Capital (DIC) - This method estimates the dollar value of intangible assets by identifying its various components. Once these components are identified, they can be directly evaluated, either individually or as an aggregated coefficient.
- Market Capitalization Method (MCM) - This calculates the difference between a company's market capitalization and the book value of its shareholders' equity as the value of its Intellectual Capital or intangible assets.
- Return-on-Assets (ROA) – This method is the average pre-tax earnings of a company for a period of time divided by the average tangible assets of the company. The result is a company ROA that is then compared with its industry average. The difference is multiplied by the company's average tangible assets to calculate average annual earnings from the intangibles. Dividing the above average earnings by the company's average cost of capital or an interest rate, one can derive an estimate of the value of its intangible assets or Intellectual Capital.
- Scorecard Method (SCM) - The various components of intangible assets or Intellectual Capital are identified and indicators and indices are generated and reported in scorecards or as graphs. SCM methods are similar to DIC methods, except that no estimate is made of the dollar value of the intangible assets. A composite index may or may not be produced.

These methods offer a wide variety of different advantages. The methods offering monetary valuation, such as ROA and MCM methods are very useful in merger & acquisition situations and for stock market valuations. They can also be used for inter-firm comparisons within the same industry help in estimating and illustrating the financial value of Intangible assets. Finally, because they build on long established accounting rules they are easily communicated to authorities in the accounting profession. The disadvantages on the other hand are that by translating everything into terms of money they may become superficial and one may tend to conclude that the figures are all covered in the financial reports hence the need for this new methodology for reporting needs to be further strengthened. The ROA methods are very sensitive to interest rate and discounting rate assumptions and the methods

that measure only on the organisation level are of limited use to management purposes below board level. Several of them are of no use especially in the case of non-profit organizations, internal departments and public sector organizations.

The advantages of the DIS and SC methods are that they can create a more comprehensive picture of an organisation's health than financial metrics and that they can be easily applied at any level of an organisation. They measure closer to an event and reporting can therefore be faster and more accurate than pure financial measures. Since they do not need to measure in financial terms they are very useful for non-profit organizations, internal departments and public sector organizations and for environmental and social purposes. The disadvantages of these methods are that the indicators are contextual and have to be customised for each organisation and each purpose, which makes these comparisons very difficult. The methods are also new and not easily accepted by societies and managers who are used to see everything from a pure financial perspective. The comprehensive approaches can generate oceans of data, which are hard to analyse and to communicate.

2.20.2 Other Approaches to Measuring Intellectual Capital

Firms may wish to measure Intellectual Capital for various objectives. Certain techniques suit the given objectives more then the rest. They can be understood more clearly as follows:

a. Monitor Performance (Control). Best are Baldrige award-type of performance indicators and KPIs.

b. Acquire/Sell Business (Valuation). Best are Industry rules-of-thumb ($ per click, $ per client, brand valuation).

c. Report to Stakeholders (Justification, PR). Best are Intellectual Capital supplements, EVA, Triple-bottom line.

d. Guide Investment (Decision). None of the intangibles approaches can beat traditional Discounted Cash Flow.

e. Uncover Hidden Value (Learning). Best are score cards and Direct Intellectual Capital methods.

Thus it is evident and needs to be understood that one method cannot fulfil all purposes of reporting of intangibles. People utilizing this kind of information need to exercise prudence in selecting the most appropriate method depending on purpose, situation and audience. A few intangible asset measuring models have been compiled in Table 2.8

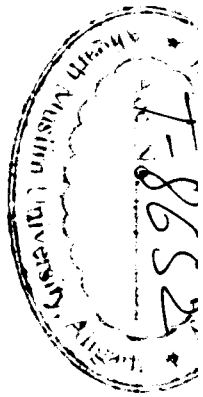
These measuring techniques compiled by Karl Sveiby in 2007, have been discussed further in an attempt to give a more comprehensive valuation of Intellectual Capital.

Bates Gruppen is the Norwegian arm of Bates Worldwide and part of the Cordiant Communications Group. It has proposed a method that consists entirely of non-financial measures. The Company IQ allows a company to score its knowledge assets against those of a similar organisation.

1. Stage one: Identify why customers buy from one company as opposed to a rival. This is best done in a day workshop in which management select between eight and twelve attributes for example, rapid response or good design. The final list is sent to customers and employees who rate each attribute twice, once for its value to customers and then for its uniqueness. A scale of one to seven is used. The results are plotted on to a two-by-two matrix. Any attributes that make it into the top upper-right quadrant and are high on value and uniqueness will be explored further.
2. Stage two: Identify the intellectual assets that produce star attributes – Bates Gruppen has identified one hundred. Ideally, these should be divided as equally as possible between human, customer and structural Intellectual Capital assets. All of these assets must either be measurable in absolute terms, for example, training expenses, or capable of measurement using scales, for example, customer satisfaction. At least sixty percent of the assets identified should be comparable to data from reputable benchmarking studies or from the PIMS database a huge repository containing data on items such as quality for thousands of companies.

Table 2.8 – Compilation of models and techniques to measure Intellectual Capital.

Approx. year	Label	Major Proponer	Category	Description of Measure
2004	National Intellectual Capital Index	Bontis (2004)	SC	A modified version of the Skandia Navigator for nations: National Wealth is comprised by Financial Wealth and Intellectual Capital (Human Capital + Structural Capital)
2004	Topplinjen/ Business IQ	Sandvik (2004)	SC	A combination of four indices; Identity Index, Human Capital Index, Knowledge Capital Index, Reputation Index. Developed in Norway by consulting firm Humankapitalgruppen. http://www.humankapitalgruppen.no/
2004	MAGIC	EU research project	SC	A project partly funded by the European Commission. The method follows the Skandia model with Human Capital, Organizational Capital, Market Capital and Innovation Capital. MAGIC
2003	Danish guidelines	Mouritzen, Bukh & al. (2003)	SC	A recommendation by government-sponsored research project for how Danish firms should report their intangibles publicly. Intellectual Capital statements consist of 1) a knowledge narrative, 2) a set of management challenges, 3) a number of initiatives and 4) relevant indicators. http://www.handels.gu.se/epc/archive/00003701/
2003	Intellectual Capita dVAL™	Bonfour (2003)	SC	"Dynamic Valuation of Intellectual Capital". Indicators from four dimensions of competitiveness are computed: Resources & Competencies, Processes, Outputs and Intangible Assets (Structural Capital and Human Capital indices). In French
2002	FiMIAM	Rodov & Leliaert (2002)	DIC/MC M	Assesses monetary values of Intellectual Capital components, a combination both tangible and Intangible



				assets measurement. The method seeks to link the Intellectual Capital value to market valuation over and above book value.
2002	Intellectual Rating™	Capit	Edvinsson (2002)	SC	An extension of the Skandia Navigator framework incorporating ideas from the Intangible Assets Monitor; rating efficiency, renewal and risk. http://www.intellectualcapital.se/rating.htm
2002	Value Scoreboard™	Chain	Lev B. (2002)	SC	A matrix of non-financial indicators arranged in three categories according to the cycle of development: Discovery/Learning, Implementation, Commercialization. Descibed in book Lev (2005): Intangibles.
2002	Meritum guidelines		Meritum Guidelines (2002)	SC	An EU-sponsored research project, which yielded a framework for management and disclosure of Intangible Assets in 3 steps: 1) define strategic objectives, 2) identify the intangible resources, 3) actions to develop intangible resources. Three classes of intangibles: Human Capital, Structural Capital and Relationship Capital. Meritum final report.
2001	Knowledge Cycle	Audit	Schiuma Marr (2001)	&SC	A method for assessing six knowledge dimensions of an organisation's capabilities in four steps. 1) Define key knowledge assets. 2) Identify key knowledge processes. 3) Plan actions on knowledge processes. 4) Implement and monitor improvement, then return to 1). Described in Book (2002). Profit with People by Deloitte & Touche.
2000	Value Creation (VCI)	Index	Baum, Ittner, Larcker, Low, Siesfeld, and Malone (2000)	SC	Developed by Wharton Business School, together with Cap Gemini Ernst & Young Center for Business Innovation and Forbes. They estimate the importance of different nonfinancial metrics in explaining the market value of companies. Different factors for different industries. The VCI focuses on the factors that markets consider important rather than on what managers say is important.

				http://members.forbes.com/asap/2000/0403/140.html
2000	The Value Explorer™	Andriessen &Tiessen (2000)	DIC	Accounting methodology proposed by KMPG for calculating and allocating value to 5 types of intangibles: (1) Assets and endowments, (2) Skills & tacit knowledge, (3) Collective values and norms, (4) Technology and explicit knowledge, (5) Primary and management processes.
2000	Intellectual Asset Valuation	Sullivan (2000)	DIC	Methodology for assessing the value of Intellectual Property.
2000	Total Value Creation, TVC™	Anderson &McLean (2000)	DIC	A project initiated by the Canadian Institute of Chartered Accountants. TVC uses discounted projected cash-flows to re-examine how events affect planned activities. http://www.insight-mag.com/insight/03/09/col-2-pt-1-AcquiringMinds.asp
1999	Knowledge Capital Earnings	Lev (1999)	ROA	Knowledge Capital Earnings are calculated as the portion of normalised earnings (3 years industry average and consensus analyst future estimates) over and above earnings attributable to book assets. Earnings then used to capitalise Knowledge Capital. Similar to CIV. http://www.cfo.com/article.cfm/2992913
1998	Inclusive Valuatior Method-ology (IVM)	McPherson (1998)	DIC	Uses hierarchies of weighted indicators that are combined, and focuses on relative rather than absolute values. Combined Value Added = Monetary Value Added combined with Intangible Value Added. http://www.infoplex-uk.com/vmp/Origins.htm
1998	Accounting for th Future (AFTF)	Nash H. (1998)	DIC	A system of projected discounted cash-flows. The difference between AFTF value at the end and the beginning of the period is the value added during the period.

					http://home.sprintmail.com/~humphreynash/future_of_accounting.htm
1998	Investor assigned market value (IAMV™)	Standfield (1998)	MCM		Takes the Company's True Value to be its stock market value and divides it in Tangible Capital + (Realised Intellectual Capital + Intellectual Capital Erosion + SCA (Sustainable Competitive Advantage). The method has not been described in a refereed paper.
1997	Market-to-Book Value	Stewart (1997) Luthy (1998)	MCM		The value of Intellectual Capital is considered to be the difference between the firm's stock market value and the company's book value.
1997	Economic Value Added (EVA™)	Stewart (1997)	ROA		Calculated by adjusting the firm's disclosed profit with charges related to intangibles. Changes in EVA provide an indication of whether the firm's Intellectual Capital is productive or not. http://www.sternstewart.com/evaabout/whatis.php
1997	Calculated Intangible Value (CIV)	Stewart (1997) Luthy (1998)	ROA		Adaptation of a US tax method for calculating the value of Goodwill. Calculates the excess return on hard assets then uses this figure as a basis for determining the proportion of return attributable to intangible assets. http://www3.bus.osaka-cu.ac.jp/apira98/archives/htmls/25.htm
1997	Value Added Intellectual Coefficient (VAIC™)	Pulic (1997)	ROA (doesn't quite fit any of the categories)		An equation that measures how much and how efficiently Intellectual Capital and capital employed create value based on the relationship to three major components: (1) capital employed; (2) human capital; and (3) structural capital. $VAIC^{TM}_i = CEE_i + HCE_i + SCE_i$ http://www.vaic-on.net/start.htm
1997	Intellectual Capital Index™	Roos, Roos, Dragonetti & Edvinsson (1997)	SC		Consolidates all individual indicators representing intellectual properties and components into a single index. Changes in the index are then related to changes in the firm's market valuation.

				http://www.intcap.com/about_ics.html
1996	Technology Broker	Brooking (1996)	DIC	Value of Intellectual Capital of a firm is assessed based on diagnostic analysis of a firm's response to twenty questions covering four major components of Intellectual Capital: Human-centred Assets, Intellectual Property Assets, Market Assets, Infrastructure Assets. http://kmi.open.ac.uk/people/sbs/org-knowledge/ic-paper.html
1996	Citation-Weighted Patents	Bontis (1996)	DIC	A technology factor is calculated based on the patents developed by a firm. Intellectual Capital and its performance is measured based on the impact of research development efforts on a series of indices, such as number of patents and cost of patents to sales turnover, that describe the firm's patents. http://econwpa.wustl.edu/eps/dev/papers/0012/0012002.pdf
1995	Holistic Accounts	Rambøll Group	SC	Rambøll is a Danish consulting group, which since 1995 reports according to its own 'Holistic Accounts" report. Based on the EFQM Business Excellence model http://www.efqm.org/. Describes nine key areas with indicators: Values and management, Strategic processes, Human Resources, Structural Resources, Consultancy, Customer Results, Employee Results, Society Results and Financial Results. http://www.ramboll.dk/docs/dan/Pressecenter/Publikationer/generelle/capitalization.pdf
1994	Skandia Navigator™	Edvinsson and Malone (1997)	SC	Intellectual Capital is measured through the analysis of up to 164 metric measures (91 intellectually based and 73 traditional metrics) that cover five components: (1) financial; (2) customer; (3) process; (4) renewal and

				development; and (5) human. http://www.12manage.com/methods_skandianavigator.html
1994	Intangible Asset Monitor	Sveiby (1997)	SC	Management selects indicators, based on the strategic objectives of the firm, to measure four aspects of creating value from 3 classes of intangible assets labelled: People's competence, Internal Structure, External Structure. Value Creation modes are: (1) growth (2) renewal; (3) utilisation/efficiency; and (4) risk reduction/stability. http://www.sveiby.com/Portals/0/articles/companymonitor.html
1992	Balanced Score Card	Kaplan and Norton (1992)	SC	A company's performance is measured by indicators covering four major focus perspectives: (1) financial perspective; (2) customer perspective; (3) internal process perspective; and (4) learning perspective. The indicators are based on the strategic objectives of the firm. http://www.balancedscorecard.org/
1990	HR statement	Ahonen (1998)	DIC	A management application of HRCA widespread in Finland. The HR profit and loss account divides personnel related costs into three classes for the human resource costs: renewal costs, development costs, and exhaustion costs. 150 listed Finnish companies prepared an HR statement in 1999.
1989	The Invisible Balance Sheet	Sveiby (ed.MCM 1989) The "Konrad" group		The difference between the stock market value of a firm and its net book value is explained by three interrelated "families" of capital; Human Capital, Organisational Capital and Customer Capital. The three categories first published in this book in Swedish have become a de facto standard. Download English translation of book here. Download article The Invisible Balance Sheet.

1988	Human Resource Costing & Accounting (HRCA)	Johansson (1996)	DIC	Calculates the hidden impact of HR related costs which reduce a firm's profits. Adjustments are made to the P&L. Intellectual Capital is measured by calculation of the contribution of human assets held by the company divided by capitalised salary expenditures. Has become a research field in its own right. HRCA journal.
1970's	Human Resource Costing & Accounting (HRCA)	Flamholtz (1985)	DIC	The pioneering work on HR accounting. A number of methods for calculating the value of human resources. http://www.brunel.ac.uk/~bustcf/bola/personnel/assets.html www.fek.su.se/home/bic/meritum/download/NYALITT7.rtf
1950's	Tobin's q	Tobin J.	MCM	The "q" is the ratio of the stock market value of the firm divided by the replacement cost of its assets. Changes in "q" provide a proxy for measuring effective performance or not of a firm's Intellectual Capital. Developed by the Nobel Laureate economist James Tobin in the 1950's. http://en.wikipedia.org/wiki/Tobin's-q

3. Stage three: It is now possible to calculate the Company IQ. Scores on the hundred selected assets must first be weighted for relative impact on profitability (available from PIMS) then compared with similar companies on the chosen database. Bates Gruppen has selected a median score of 100.
4. The process does not stop at stage three. As with any measurement system some form of feedback has to be built into the system for a company to remain competitive. The strength of assets within the hundred can be identified and weaker ones improved.

This method is more than just a measurement system. It requires an organisation to identify its highly valuable, unique capabilities and the Intellectual Capital assets behind them. While calculating its IQ, a company may find it is producing goods or providing services that are similar to those of a competitor or contain features that add little value to customers. This will leave the company with a ready-made list of indicators, so allowing it to take action that has a direct impact on its profit maximizing capabilities. This system requires a great deal of work initially, including gathering data from employees and customers who may be unwilling to participate or who may provide hastily compiled information of little use. It may also be difficult for a company to divide its knowledge assets equally between the three types of Intellectual Capital, meaning that some are incorporated to make up the numbers while others are excluded. The suggestion that at least 60 per cent of the indicators are comparable to those from other companies still leaves a lot open to subjectivity.

2.20.3 Vital Signs Scorecard

VanderKaay (2000) proposes a "Vital Sign" scorecard. These vital signs can be used to identify the most basic corporate fitness level required to compete in a knowledge-intensive world. Vanderkaay contends that many Intellectual Capital measurement tools place disproportionate emphasis on what is easy to quantify, rather than what is critical to a firm's survival. For example, a company may be pre-occupied with the number of ideas in its knowledge management database and be completely unmindful of the destruction of its Intellectual Capital as the result of oppressive office politics. In this instance, a relative measure (for example, a one out of ten rating under vital sign No. 3, "Great place to

work") provides more essential information than determining the size of the database (VanderKaay, 2000). There are ten questions in the Vital Sign scorecard and this is shown in Table 2.9.

Table 2.9The vital signs scorecard

Intellectual Capital "vital signs" scorecard
Building the foundation for an integrated e-business
1. Brand image and reputation
2. People "live the strategy"
3. Great place to work
4. Deliberately share knowledge
5. Challenge the status quo
6. Anticipate future, action orientated
7. Net-driven rethink of entire business
8. Customer empathy
9. Initiative recognized
10. Learn from multiple sources
1 2 3 4 5 6 7 8 9 10
The vital signs scorecard
Source: VanderKaay (2000)

The questions in the scorecard are reminiscent of an employee satisfaction survey. They are probably more suitable as a gauge of employee satisfaction level than as a true measure of Intellectual Capital. Barsky and Marchant (2000) highlight an Ernst and Young study of financial analysts that identifies the ten most important non-financial measures to investors-metrics that can be integrated into management reporting and evaluation systems. The ten metrics are shown in Table 2.10

These measures reinforce the view that intellectual resources, not products, constitute the primary source of competitive advantage. However, except for market share, the metrics are subjective and not easily quantifiable. Thus, such a measure for Intellectual Capital will be difficult to apply across different companies.

Table 2.10 The vital signs scorecard

Ernst and Young metrics

1.										Strategy education
2.										Management Credibility
3.										Quality of strategy
4.										Innovation
5.										Ability to attract talented people
6.										Market Share
7.										Management expertise
8.										Quality of executive compensation
9.										Quality of major processes
10.										Research leadership
	1	2	3	4	5	6	7	8	9	10

The vital signs scorecard

Source: Barsky and Merchant (2000)

2.20.4 Cluster Framework for Intellectual Capital Measurement

Oliver and Porta (2006) present a theoretical cluster strategic framework for Intellectual Capital measurement. Design methodology was used to construct a model which achieves the aforementioned purpose. The paper provides a comprehensive model to describe, map, measure and value Intellectual Capital in clusters and systematically control the Intellectual Capital evolution. However, the system provided is not an exhaustive use of all the available measures. A more comprehensive practical application on several clusters would be necessary to validate and re-adapt the model.

2.21 Mathematical Formula to Calculate Intellectual Capital

2.21.1 Economic Value Added (EVA)

Economic Value Added (EVA) was introduced by Stem Stewart as a comprehensive performance measure that uses the variables of capital budgeting, financial planning, goal setting, performance measurement, shareholder communication and incentive compensation to account properly for all ways in which corporate value can be added or lost (Bontis et al., 1999). EVA concentrates on maximising incremental earnings over capital costs. By contrast, the market value added (MVA) represents the spread between the cash that a firm's investors have put into the business since the startup of the company and the present value of the cash that they can get out of it by selling their shares.

EVA is intended to offer improvements to the MVA calculation (Bontis et al., 1999). However, in terms of its use as a surrogate measure of Intellectual Capital, Bontis et al. (1999) note that if EVA is used, it implies that no specific measures of intangible assets are needed. Three other limitations in the calculations used to create EVA include: the use of book assets which rely on historical costs and give little indication of current market value or replacement cost; empirical research has not shown conclusively that EVA is a better predictor of stock price or its variation; and the starting point for EVA analysis assumes that companies should be operating for the benefit of its shareholders. In sum, the EVA performance measure may not be appropriate when attempting to quantify the value of intangible assets.

2.21.2 Market to Book Value comparison

Another widely known indicator of the Intellectual Capital is the market-to-book value comparison (Dzinkowski, 2000; Lev and Feng, 2001; Guthrie, 2001; Seetharaman et al., 2002). Stewart (1997) and Edvinsson and Malone (1997) argue that the value of a firm's Intellectual Capital can be represented by the difference between the book value and the market value of the firm. They assume that Market Value = Book Value + Intellectual Capital. However, this value will then be subjected to variations in the book value of the physical assets, their current market price and various imperfections that may exist in market valuations. Any fluctuations in share price will lead to a corresponding change in Intellectual Capital, even though nothing has fundamentally changed in the company. Stock prices are, at times, affected by many economic factors not associated with a company's tangible assets or Intellectual Capital (Luthy, 1998). Calculations of Intellectual Capital that use the difference between market and book values can also suffer from inaccuracy because book values can be impacted by many factors including for example, if firms choose to, or are required to, revalue property or adopt tax depreciation rates for accounting purposes (Dzinkowski, 2000). Lev and Feng (2001) also reject this measure of knowledge assets. They assert that "The most egregious of this crude measure is that the number rises and falls with market exuberance."

2.21.3 Tobin's q

Luthy (1998) highlights the use of Tobin's q method to measure Intellectual Capital. Tobin's q measure can help to predict investment decisions. Tobin's q is essentially the same as the market-to-book ratio except that it uses replacement cost of tangible assets rather than book value of tangible assets in the calculation. The theory is that if q is greater than 1 and greater than competitors' q, then the company has the ability to produce higher profits than similarly placed companies. The company has something intangible (or Intellectual Capital) that gives it an advantage over competitors. Tobin's q can be calculated by taking the book value of a company, adding back accumulated depreciation and making appropriate adjustments for price changes in different classes of assets from the time of purchase. This procedure is an improvement of the market-to-book value, but still faces the same difficulties regarding volatile stock prices.

2.21.4 Value Added Intellectual Coefficient (VAIC™)

Pulic (1998, 2000) developed the "Value Added Intellectual Coefficient" (VAIC™) to measure the Intellectual Capital of companies. The model starts with a company's ability to create VA. VA is the difference between sales outputs (OUT) and inputs (IN):

OUT – IN = VA

OUT represent the income and comprise all the products, services and assets sold on the market. IN contain all the expenses covering everything that come into the company except manpower costs. The result is VA expressing the new created wealth of a period. The second relation of VA, one employing physical capital (CA) is called "value added capital coefficient" (VACA). This is an indicator for the VA created by one unit of physical capital:

$$\text{VACA} = \frac{\text{VA}}{\text{CA}}$$

The "human capital coefficient" (VAHU) shows how much VA is created by a dollar spent on employees:

$$\frac{SC}{VA} = STVA$$

The relation between VA and HC indicates the ability of HC to create value in a company. The next step is to find out the contribution of SC in value creation. In Pulic's model, SC is VA-HC. HC and SC are inversely proportional. STVA measures the share of SC in the creation of VA. The third relation between VA and SC is calculated as :

$$\frac{SC}{VA} = STVA$$

The final step is the calculation of the intellectual ability of a company. It is the sum of previously mentioned coefficients which results in a new and unique indicator – the VAIC.

2.21.5 Calculated Intangible Value

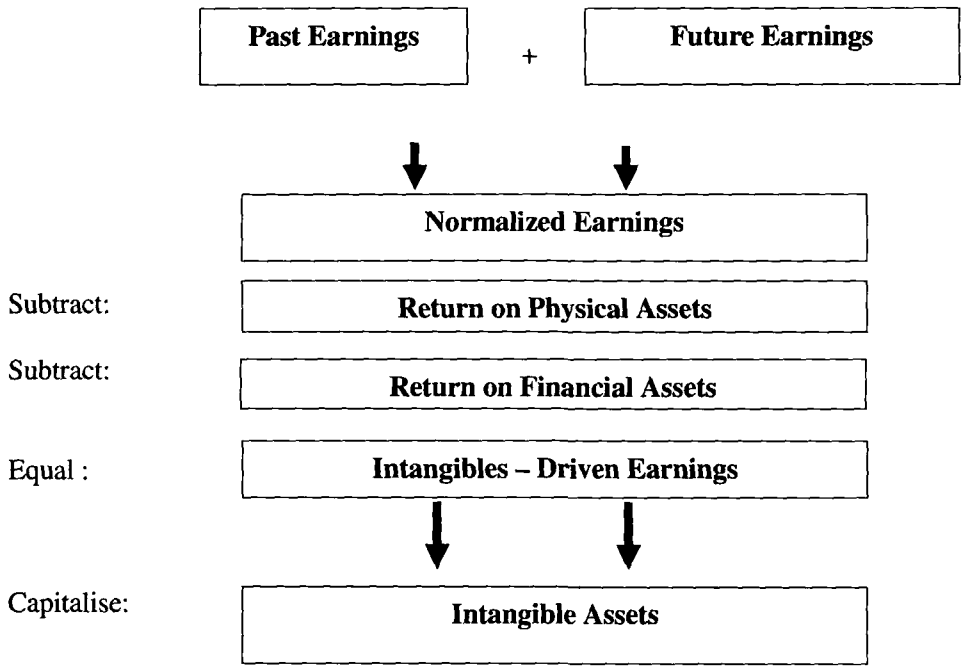
According to Dzinkowski (2000), a measure called "calculated intangible value" (CIV) has been developed by NCI Research to calculate the fair market value of the intangible assets of the firm. The methodology follows Revenue Ruling 680609 of the United States Internal Revenue Service. The CIV calculates the excess return on hard assets and uses this calculation as a basis for determining the proportion of return attributable to intangible assets. Although the CIV gives an indication of the value-add of the company in providing return on the tangible assets, it does not distinguish between physical and financial assets. When lumped together as total tangible assets, the model also assigns the same rate of return for both physical and financial assets. This reduces the usefulness of the measure. It does not reflect market realities nor allow for a separate measure of the Intellectual Capital contribution to a company's value.

2.21.6 Using production function to measure Intellectual Capital

Lev and Feng (2001) developed another measure for the Intellectual Capital of firms. They have broken with accounting tradition and his approach allows one to infer a dollar value for almost any company's Intellectual Capital from its performance (Stewart, 2001). Their methodology for measuring the value of intangible assets is based on the economic concept of "production function", where the firm's economic performance is considered

to be generated by the three major classes of IN: physical, financial, and knowledge assets (Lev and Feng, 2001). The postulated relationship is shown below where α, β and δ represent the contributions of a unit of asset to the enterprise performance. Figure 2.5 shows the model for measuring Intellectual Capital.

$$\text{Economic Performance} = \alpha(\text{Physical Assets}) + \beta(\text{Financial Assets}) + \delta(\text{Intangible Assets})$$



Source : Lev and Fang (2001)

Figure 2.5 - The Lev model

The model starts with the company's "normalised earnings" taken as the average of several (generally 3-5) historical years of reported net earnings (past earnings), and the same number of expected years earnings (future earnings) from analysts. The value of the Intellectual Capital can be deduced by subtracting the after-tax return on financial assets and the average after-tax return for physical assets. The resultant "intangible-driven earnings" provide the value of intangible assets. Capitalising the expected stream of these earnings yields an estimate of "intangible capital." This method allows a more objective

measure of Intellectual Capital and derives its value from the company earnings and other attributes found in a traditional balance sheet. However, the model also requires forecast earnings of firms to be available. These forecasts may not be readily available for companies in some markets.

2.22 Accounting Frameworks contributing to measurement of Intellectual Capital

There are several other models contributed by the accounting fraternity. It is contended that to be decision-useful, an accounting model must look to the future. In this regard, cost-based accounting looks backwards and lacks relevance (Nash, 1998). Several models have been developed that may help accounting take account of decision-making usefulness, and therefore include some futurology (Nash, 1998). The various models are shown in Table 2.11

Table 2.11 – The various accounting models to measure Intellectual Capital

Various accounting models	
Human resource costing and accounting by	Calculates the hidden impact of HR related costs Johanson and Grojer (1998) which reduce a firm's profits. Adjustments are made to the profit and loss statement. Intellectual Capital is measured by calculation of the contribution of human assets held by the company divided by capitalised salary expenditures.
Accounting for the future (AFTF) by Nash (1998)	A system of projected discounted cash-flows. The difference between AFTF value at the end and the beginning of the period is the VA during the period.
Total value creation, TVC™ by McLean (1999)	A project initiated by the Canadian Institute of Chartered Accountants. TVC uses discounted projected cash-flows to re-examine how events affect planned activities.
The Value ExplorerTM and weightless	Accounting methodology proposed weights by Andriessen and Tissen (2000) (2001) for calculating and allocating value to five types

of intangibles: assets and endowments; skills and tacit knowledge; collective values and norms; technology and explicit knowledge; and primary and management processes.

2.23 Summary of Literature review

To summarise, several methodologies for defining, classfiying, reporting and measuring Intellectual Capital have been developed. These measuring techniques are still evolving. Bornemann et al. (1999) point out that standards for measuring and reporting Intellectual Capital are still in their infancy, confused and unstructured. This is quite normal for new concepts, and they suggest that a constructive approach is to focus on Intellectual Capital measures. Bontis (2001) argues that a paradigm requires actual findings from measured variables to confirm observed and expected events. He claims that like all business models advanced to date, Intellectual Capital models need to be tested for their defensibility as a new paradigm.

Caddy (2002) calls for greater focus to investigate current metrics used to determine their overall validity. Validation of Intellectual Capital measurement will improve the ability of organizations to draw meaningful conclusions about themselves from their own Intellectual Capital data, as well as make meaningful assessments of how well or otherwise they are doing when compared with other similar organizations (Caddy, 2002). Mouritsen et al. (2001) state that Intellectual Capital report is different from reading a financial statement. This is because the Intellectual Capital statement is not regulated and based on specific requirements as in the case of the financial statements. The financial statements are an institutionalised report accepted and endorsed by accounting bodies worldwide (Mouritsen et al., 2001). Nevertheless, more objective methodologies are emerging that allow Intellectual Capital to be measured in a manner that can be applied.

2.24 Current status of Intellectual Capital in India

In India the concept is still in its very nascent stage and needs to be understood in its complete meaning before it becomes a part of standard corporate reporting procedure. Analysis of past work on Intellectual Capital in India has revealed that only a handful of companies have actually attempted to identify, understand and report their Intellectual

Capital. The reports have not been in any specific format and most of the times the Intellectual Capital is hidden in the financial reports. We can say that Intellectual Capital is reported but not in so many words because there is always supplementary information in all public sources of information, dissemination from the firm which conveys details on the intangible assets or Intellectual Capital. All the firms that have attempted to use formal methods of reporting Intellectual Capital have been studied but the reporting style is very subjective and does not cover all elements that can be thought of as necessary for a good Intellectual Capital report.

2.25 Identification of the Research Gap

Extensive research has been conducted to analyze the disclosures made by firms in order to report Intellectual Capital. In India some research has been conducted to understand Intellectual Capital reporting. It was discovered that the reporting was very haphazard and a piecemeal effort rather than a comprehensive standardized process. There is evidence that high market valuation is due to implicit disclosures on Intellectual Capital which invoke trust in the stakeholders. The voluntary disclosures made by the firms have never been analyzed so as to understand the extent to which disclosures were made voluntarily by the firms. This has led to the need for this research.

2.26 Conclusion

This research has aimed to understand the concept of Intellectual Capital in the Indian context and then fathom the extent to which this topic has been developed and understood by the firms so that it could be reported.

Chapter 3

Development of Conceptual Framework

3.0 Introduction

As has been made amply clear by now corporate value needs to be understood as a combination of both tangible and intangible assets. As shown in figure 3.1 the value needs to be analyzed from a broader perspective instead of focusing on the financial reports which talk of tangible assets only. The model shows how the methods of corporate valuation have evolved with time and with every new method there has been an effort to include greater element of intangible assets in the valuation process. This intangible assets was first highlighted for greater use with the development of the Balanced Scorecard and Intangible Asset Monitor. But over the past few decades there have been several models that have developed to showcase the increasing significance of intangibles in the overall asset profile of the organisations. The model clearly shows the different phases of the development of methods for corporate valuation.

Conceptually it has been observed that Intellectual Capital is the most appropriate means to understand intangible assets possessed by the firm. Literature review has revealed that there are a large number of methods in which Intellectual Capital has been identified, measured and reported by firms. It has been done extensively by a few firms and at a very naïve level by others. To the extent that there are firms which are not even aware of the essence of what Intellectual Capital implies and includes. Discussing reporting across these two extremes was a daunting task. The aim of this research was to understand corporate value using disclosures and reporting of Intellectual Capital.

Since the disclosures are voluntary given the absence of any compelling regulation, the sources of information thus also had to be only the publicly available documents rather than internal procedures and processes. Another reason of choosing public documents was that the market value of a company is based on the perception that all the stakeholders have about it. Indian markets are not strongly efficient but we may still assume that market valuation is reflective of the perception of all information

available for the firm. Using this reasoning the next step was to understand what was conveyed in the annual reports that built the trust of investors, because Balance Sheet and Profit statement was not the only reason for the high market capitalization. Also the vast difference between market value and book value need to be attributed to something which was not mentioned in the Balance sheet and P&L account.

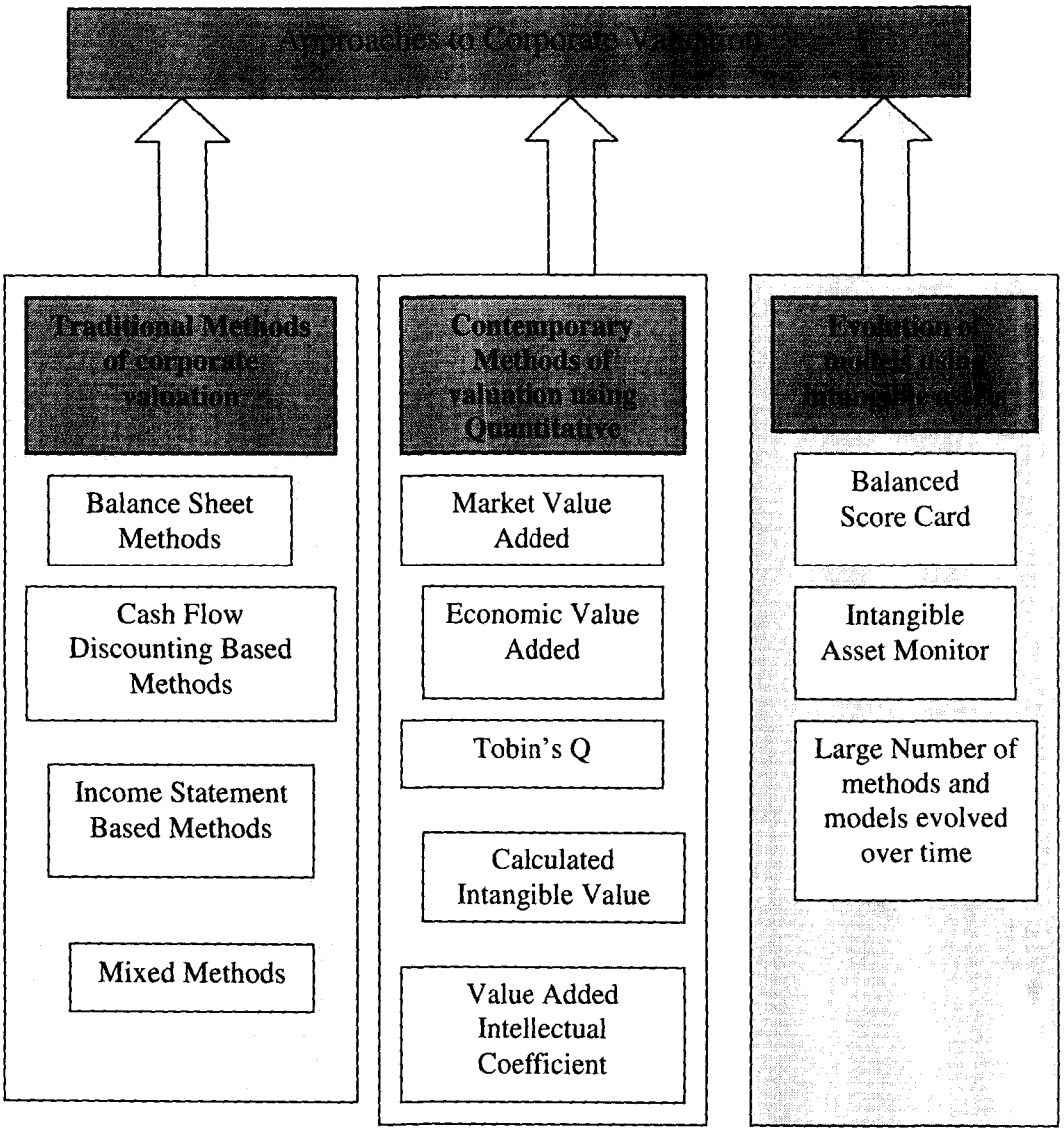


Figure 3.1 Understanding Corporate Value

Though Intangibles have been calculated and reported in firms but this valuation is generally done for major structural changes within the firm or for mergers and acquisitions decisions. Whereas given the market efficiency status and rights of

information of investors the value of the firm needs to be recalculated more realistic indicators which could lead to realistic figures.

Similarly as employees are becoming more productive and super-specialized the value of their work needs to be more closely linked to the actual value in figures that they bring to the organisations. Firms like Infosys have attempted this but it needs to spread in a more generic manner in India.

3.1 Development of the framework for this research.

The research revealed that additional information provided in the annual reports was not under any heading of Intellectual Capital at all but words similar to this term were used in the publicly disclosed documents. This necessitated the need to first understand what was subtly conveyed to the stakeholders which upheld their trust and faith in the company.

In order to analyze the content there was a need to start somewhere. Then began the work of collating all the ways in which Intellectual Capital was understood, identified, measured, managed and reported all across the world so that the best of the available literature could be used to start this research.

All possible models that were available from all over the world were studied for this research to make it as generic and rich in content as possible. It was concluded that there was no universally accepted definition, model or framework for Intellectual Capital. In fact the vastness and multitude of variety in which Intellectual Capital had been discussed among corporate and governments were magnanimous. Then was the need to study the extent to which it was formalized at various levels which had given it a significant form and shape at least in Europe. Further studies revealed that parallel work was being done in eastern economies too hence there had to be a detailed study to avoid reinventing the wheel at any level.

After all the definitions, models and frameworks had been studied then one definition and one framework was developed which could be more generic in its form structure and application. This research made an attempt to develop a framework which could be applied to more or less all firms of India. In order to test its validity the framework has been applied to the top 4 firms as per their market capitalization in the year 2009-10.

3.2 Insights into the Development of the Framework

The framework that was constructed after extensive literature review took its genesis from the most commonly referred classification of Intellectual Capital. These constituents of Intellectual Capital were then identified through various critical elements. Each element was traced back to earlier researches which have proven it reliability and validity to be used as an important element of Intellectual Capital. Value Platform Model as shown in Figure 3.2 was used as the basis for development of this framework.

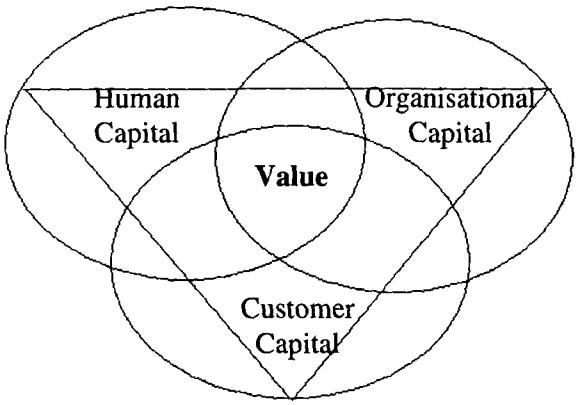


Figure 3.2 Value Platform by Petrash

The value platform model was developed as a collaborative effort by Edvinsson (Skandia), Onge (The Mutual Group) and Petrash (Dow Chemical).

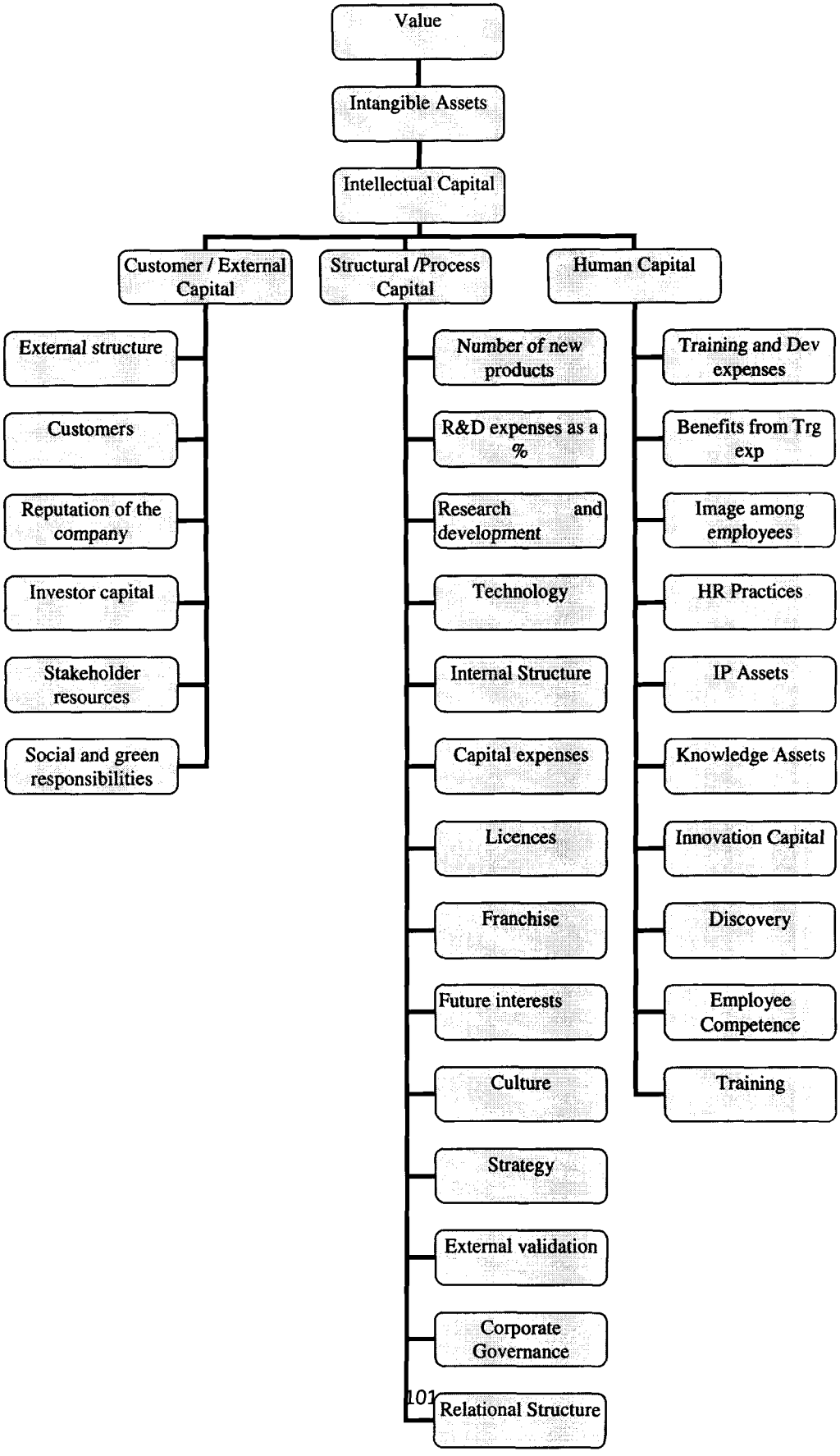
The various elements that have been identified have already been used and verified for their applicability and usage by earlier researches which have been referred to in the framework itself. The effort has been to ensure that the models are aligned to Indian business scenario. This has been ascertained by applying the framework to the Top 4 Indian companies which belong to various sectors. The conceptual framework is given in Figure 3.4 and Table 3.1 as follows:

Table 3.1 Conceptual Framework to be used for classifying reporting of Intangibles under different heads of Intellectual Capital

Human Capital		Edvinsson (19911), Edvinsson and Malone (19911), Roos and Roos (19911), Roos et al. (19911), Stewart (1998), Bontis et al. (1999), Can¨ibano et al. (2000), Brennan and Connell (2000), Harrison and Sullivan (2000), Sa´nchez et al. (2000), Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001) and Mouritsen et al. (2002)
1.	Training and development expenses per employee	Ramboll (2003)
2.	Benefits from training exercises	Ramboll (2003)
3.	Image of company from employees perspective	Ramboll (2003)
4.	HR and HR practice	Gu and Lev (2001), Lev (2001) MERITUM (2002)
5.	IP assets	Brooking (19911)
6.	Knowledge/Skill	Granstrand (1999), Andriessen and Tiessen (2000), Brennan and Connell (2000) and Sullivan (2000)
7.	Innovation Capital	Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001)
8.	Discovery	Lev (2001)
9.	Employees and Employee competence	Mouritsen et al. (2004), Petty and Guthrie (2000), Petty and Guthrie (2000) and Sveiby (19911), Gunther (2001)
10.	Training	IASB (2004b)

Structural Capital		Edvinsson and Malone (19911), Roos and Roos (19911), Roos et al. (19911), Stewart (1998), Bontis et al. (1999), Can˜ibano et al. (2000) and Sa´nchez et al. (2000)
1.	Number of new product introductions	Ramboll (2003)
2.	R&D expenditure as a percentage of administration	Gu and Lev (2001), Redovisnings Ra°det (1995), LBK (1996), Redovisnings Ra°det (1998) and IASB (2004b)
3.	Research and development	Gu and Lev (2001), Redovisnings Ra°det (1995), LBK (1996), Redovisnings Ra°det (1998) and IASB (2004b)
4.	Technology	Itami (1991), Andriessen and Tiessen (2000), Gu and Lev (2001), Mouritsen et al. (2004) and FASB NN (2001)
5.	Internal Structure	Sveiby (19911), Brennan and Connell (2000) and Gunther (2001)
6.	Capital expenses	Chan et al. (2001) and Gu and Lev (2001)
7.	Licences	LBK (1996), Redovisnings Ra°det (1998), IASB (2004b), Redovisnings Ra°det (1995) and LBK (1996)
8.	Franchise	IASB (2004b)
9.	Future interests	IASB (2004b)
10.	Culture	Andriessen and Tiessen (2000)
11.	Strategy	Marr et al. (2003)
12.	Relational structure	Can˜ibano et al. (2000), Sa´nchez et al. (2000) and Petty and Guthrie (2000)
13.	External validation	Marr et al. (2003)
14.	Corporate Governance	Per Flo¨strand(2006), By ISS

Customer/External Capital		Edvinsson (19911), Stewart (1998) and Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001), Itami(1991)
1.	External structure	Mouritsen et al. (2002), Sveiby (19911) and Brennan and Connell (2000)
2.	Customers	Gunther (2001), Mouritsen et al. (2004), FASB NN (2001)
3.	Reputation of the company	Ramboll (2003)
4.	Investor capital	Arbeitskreis Immaterielle Werte im Rechnungswesen der Schmalenbach-Gesellschaft fu¨ r Betriebswirtschaft e.V. (2001)
5.	Stakeholder resources	Marr and Schiuma (2001)
6.	Social and green responsibilities	Orlitzky et al., 2003


Value
Intangible Assets
Intellectual Capital
Customer / External Capital
Structural /Process Capital
Human Capital
External structure
Customers
Reputation of the company
Investor capital
Stakeholder resources
Social and green responsibilities
Number of new products
R&D expenses as a %
Research and development
Technology
Internal Structure
Capital expenses
Licences
Franchise
Future interests
Culture
Strategy
External validation
Corporate Governance
Relational Structure
Training and Dev expenses
Benefits from Trg exp
Image among employees
HR Practices
IP Assets
Knowledge Assets
Innovation Capital
Discovery
Employee Competence
Training

The aim of analysis of what a firm does is to decipher how the value is created within the organization and by the organization. Determination of value tends to start with profits. Profits then need to be redefined and they need to be understood as more in terms of value delivered and value added rather than monetary numbers. Value creation is a separate aspect that is a result of all business activities and endeavors. It needs a lot more of deliberations but here for this particular research the focus in only on the components that lead to value creation and delivery.

The major role of studies on Intellectual Capital is to understand creation of value. But given the complexities around the concept of Intellectual Capital, we need to go stepwise. The steps are - Identification of elements, Identifying how these elements interact through a model, examining how the model would work under different business environments and then finally developing a generic model for analyzing Intellectual Capital inside and outside the firm which creates value. Process of IC Reporting as considered for this research methodology is given in figure 3.3

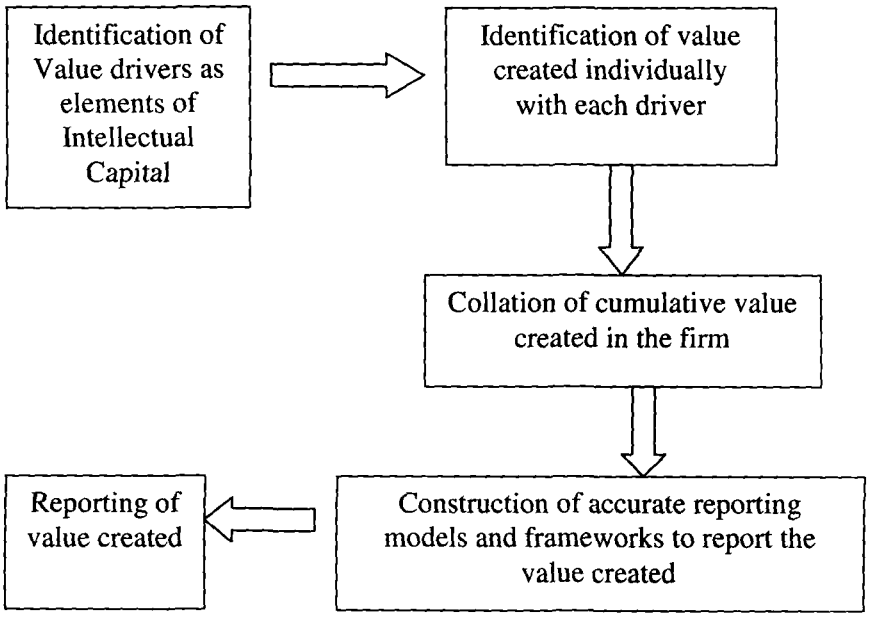


Figure 3.3 Process of IC Reporting

3.3 Conclusion

This research is thus an attempt to identify value drivers and develop a reporting framework which can be used to identify the value created and then help to report it in the most comprehensive form. Attempt has been made to make the framework as generic and as comprehensive as possible to be applicable across the vast variety of Indian firms. Given the mixed structure of Indian Economy and the rapid advent of services sector along with a significant contribution to economy still coming in from the agricultural sector, this model will take quite a few iterations till it reaches a stage of complete generalization. Till then this research needs to keep getting refined through extensions into a greater number of firms across sectors of both industries and types of ownership.

Chapter 4

Research Methodology

4.0 Introduction

A detailed literature review was conducted to understand the extent to which Intellectual Capital was understood by researchers and corporate world over and in India. During the collection of data it was discovered that the concept was not new but the perspectives towards understanding and identifying it were far too many to give it a concrete shape. During the review of literature it emerged that more than giving a concrete definition to Intellectual Capital the researchers and corporate were more inclined on understanding what constituted Intellectual Capital.

As the research was conducted further to delve deep into developing a greater understanding on Intellectual Capital, it came to light that most of the Intellectual Capital was defined using the elements, concepts and models. These were used to understand, identify, measure and manage Intellectual Capital within the organization. A few researchers have also identified models which have been used to report Intellectual Capital in the firms. There are different types in which Intellectual Capital is reported across the world.

A reasonable amount of work has been done on the Intangible asset valuation and reporting across the world signifying that the concept of Intellectual Capital has not only gained significance in business field but has caught the attention of institutions engaged in other social activities equally.

4.1 Research Objective

This research aims to analyze the voluntary disclosures made by the firm to understand whether they report Intellectual capital and how they actually report it. Since numerical measures are not widely used by Indian firms to report Intangibles, it focuses on nonmonetary descriptors for the analysis of disclosures.

4.2 Research Questions

Q1. Is corporate value created by managing Intellectual Capital?

Q2. Is corporate value reported better by reporting its Intellectual Capital?

Q3. Do Indian Companies with higher market capitalization report their Intellectual Capital?

Q4. What are the elements through which Indian Companies report their Intellectual Capital?

Q5. Can a standardized model be used by Indian companies to report Intellectual Capital?

4.3 Research Methodology for This Study

As mentioned earlier since this research was not aimed at testing hypothesis to test relationships between variables it was clearly aimed at identifying variables which could help clearly define Intellectual Capital through the voluntary disclosures made by the firms. **This research aimed at finding out and defining ways and means of understanding corporate value using reporting of Intellectual Capital**.

This research is a pioneering step towards deciphering the manifestations of Intellectual Capital in Indian corporate sector. Intellectual Capital is understood using a number of elements and variables and these elements and variables are then communicated to the stakeholders using certain types, formats and reports of disclosures which are entirely voluntary.

The Intellectual Capital disclosures in India are entirely voluntary because there is no such regulation in business reporting which mandates disclosures on Intellectual Capital. Infact the descriptors for Intellectual Capital are not clear and are too abstract to be dealt with in a scientific manner. Thus no scientific methodology could be applied to study corporate valuation using Intellectual Capital reporting and disclosures.

Thus this research methodology has been extensively descriptive to first understand the concept of Intellectual Capital and then fathom the extent to which this topic has been developed and understood by the firms so that it could be reported.

4.4 Techniques of Qualitative Research found appropriate for this study

There are many techniques for investigating undefined research problems. For this study we could choose from different categories of exploratory research methods: experience surveys, secondary data analysis, case studies, pilot studies and model building.

An *experience survey* is a technique in which individuals who are knowledgeable about a particular research problem are surveyed.

Secondary data analysis is a preliminary review of data collected for another purpose to clarify issues in the early stages of a research effort.

A *case study* method is a research technique that intensely investigates one or a few situations similar to the researcher's problem situation.

Pilot studies cover a number of diverse research techniques. It implies a research on small scale where primary data is collected from subjects of ultimate concern rather than a few knowledgeable experts or a case. It could be in the form of focus group interviews, projective techniques and depth interviews.

Model Building is another type of qualitative research which makes an attempt to specify relationships between variables based on secondary data sometimes using descriptive or predictive equations.

For this study we have tried to cases to start with the **model building approach** because this is the first step towards identification of accurate measure to identify, measure, report and manage abstract concepts like Intellectual Capital in India.

4.5 Data Collection for Qualitative Research

The three most common qualitative methods, explained in detail in their respective modules, are participant observation, in-depth interviews, and focus groups. Each method is particularly suited for obtaining a specific type of data.

- *Participant observation* is appropriate for collecting data on naturally occurring behaviors in their usual contexts.

• *In-depth interviews* are optimal for collecting data on individuals' personal histories, perspectives, and experiences, particularly when sensitive topics are being explored.

• *Focus groups* are effective in eliciting data on the cultural norms of a group and in generating broad overviews of issues of concern to the cultural groups or subgroups represented.

For this research the observations have been recorded from places where information is disclosed voluntarily by the firm. These public sources were Annual reports and websites.

4.6 Research Design for This Study

Since the present research proposes to identify the type and extent of voluntary disclosures made by Indian companies, the research design adopted for this study was more descriptive. This research design was a descriptive case study where observations were recorded from four organizations and the information was analyzed for its adequacy in disclosing the requisite details on firms' Intangible Assets and Intellectual Capital.

4.7 Case Study Methodology

A case study is an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident and it relies on multiple sources of evidence. (Yin,1994, p.13) In explaining what a case is, Yin suggests that the term refers to an event, an entity, an individual or even a unit of analysis. It is an empirical inquiry that investigates a contemporary phenomenon within its real life context using multiple sources of evidence Case study research investigates predefined phenomenon but does not involve explicit control or manipulation of variables, the focus is on in-depth understanding of a phenomenon. Case study research can be used to achieve research aims: to provide descriptions of a phenomenon, develop theory and test theory.

4.8 Strengths and Weaknesses of Using Case Study Method

Case studies have been criticized by some as lacking in scientific rigor and reliability

and that they do not address the issues of generalizability. However, there are some strengths of case study. For example, it enables the researcher to gain a holistic view of a certain phenomenon or series of events and can provide a round picture since many sources of evidence are used. Another advantage is that case study can be useful in capturing the emergent and imminent properties of life in organizations and the ebb and flow of organizational activity, especially where it is changing very fast.

Case studies also allow generalizations because the result of findings using multiple cases can lead to some form of replication and more number of cases leads to more generalizations.

4.9 Use of the Case based approach for this research

Given the nature of the subject of research, case study method was the most appropriate method for study. More so because case studies are one approach that support deeper and more detailed investigation of the type that is normally necessary to answer how and why questions.

Case study research is also good for contemporary events when the relevant behavior cannot be manipulated. Typically case study research uses a variety of evidence from different sources, such as documents, artefacts, interviews and observation, and this goes beyond the range of sources of evidence that might be available in historical study.

In summary then, case study research has been chosen because it is useful when:

A how or why question is being asked about a contemporary set of events over which the investigator has little or no control. (Yin, 1994, p.9)

In contrast to surveys, typically the number of units studied in a case study is many less than in a survey, but the extent of detail available for each case needs to be greater to be more articulate in presenting the findings.

This research involves development of cases based on the information available in their annual reports and other public documents. Since the information is authenticated to be true by the firm themselves and the all the elements used in the model have been proven to be true based on past researches utmost care has been taken to ensure that the model developed and used in the cases is capable of

generalization.

4.10 Development of Caselets

This research has involved developing 4 cases using multiple elements for analysis because multiple case designs are preferred over single case study designs. On the basis of the replication logic discussed above, multiple cases can be regarded as equivalent to multiple experiments. The more cases that can be marshaled to establish or refute a theory, the more robust are the research outcomes.

This research tries to explore the embedded elements with 4 samples in order to present a holistic perspective of voluntary disclosures made by Indian firms using the supplementary information in their annual reports and other public documents.

4.11 Data Collection protocol for case study

Data collection was to be guided by a case study protocol. This protocol included the following sections:

(i) An overview of the case study project.

(ii) Field procedures, such as use of different sources of information, and access arrangements to these sources.

(iii) Case study questions, or the questions that the case study researcher needs to keep in mind when collecting data.

This case study research depended on annual reports and websites as the principal sources of evidence. The framework was the primary tool that was used to address the main issues regarding reporting of Intellectual Capital in Indian companies.

4.12 Criteria for Selection of Companies

The top 4 firms used as a sample have been chosen on the basis of their market capitalization. The reason that market capitalization has been chosen to be deciding variable for choosing the sample is because large market capitalization is an indicator of strong trust of the investors and strong presence in the Indian economy. If the companies have a strong market presence then they must be commanding a lot of trust from stakeholders. This trust must have been evoked through long lasting presence and some salient disclosures which may have impacted their favorable image directly

and indirectly. Thus their market capitalization can be thought of as an indicator that the companies have evoked a great amount of trust and this was possible only when stakeholders knew enough and thus the firms must have been disclosing enough amount of information.

Thus market capitalization serves as a strong indicator for enough and trust evoking disclosures made by the firm besides their profit making capacity. And their strong presence in the market speaks of the fact that the profit making capacity is sustainable too. Hence it is profitability and sustenance which is evident through a high market capitalization and serves as enough evidence that such firms must be disclosing enough information voluntarily that is keeping all stakeholders happy and satisfied.

The other criteria for choosing the given 4 companies are the diversity of the industries to which they belong. Since the framework needs to be generic enough to be applicable to both service and manufacturing sector, public and private sector the firms have been chosen from all sectors which are representatives of mixed Indian economy.

Thus the companies chosen are a reasonable representation of firms which can be used to study and analyze the disclosures in terms of content and patterns. Also since they belong to big and diverse sectors they can be used as true representatives of Indian corporate sector.

4.13 Content Analysis as Research Methodology

Content analysis is defined as a technique for gathering data via the codification of qualitative information, in anecdotal and literary form, into categories in order to derive quantitative scales of varying levels of complexity (Abbott and Monsen, 1979, p. 504). "Content analysis is a research technique for making replicable and valid inferences from data according to their context" (Krippendorf, 1980, p. 21). The process of qualitative content analysis often begins during the early stages of data collection. Some of the steps overlap with the traditional quantitative content analysis procedures (Tesch, 1990), while others are unique to this method. Depending on the goals of the study, the content analysis may be more flexible or standardized, but generally it can be divided into the following steps, beginning with preparing the data and proceeding through writing up the findings in a report.

4.14 Techniques of Qualitative Content Analysis

Qualitative content analysis is one of numerous research methods used to analyze text data. Other methods include ethnography, grounded theory, phenomenology, and historical research. Research using qualitative content analysis focuses on the characteristics of language as communication with attention to the content or contextual meaning of the text (Budd, Thorp, & Donohew, 1967; Lindkvist, 1981; McTavish & Pirro, 1990; Tesch, 1990). Text data might be in verbal, print, or electronic form and might have been obtained from narrative responses, open-ended survey questions, interviews, focus groups, observations, or print media such as articles, books, or manuals (Kondracki &Wellman, 2002). Qualitative content analysis goes beyond merely counting words to examining language intensely for the purpose of classifying large amounts of text into an efficient number of categories that represent similar meanings (Weber, 1990). **These categories can represent either explicit communication or inferred communication.** The goal of content analysis is "to provide knowledge and understanding of the phenomenon under study" (Downe-Wamboldt, 1992, p. 314). In this research qualitative content analysis is chosen as a research method for the subjective interpretation of the content of text data from all public sources of information through the systematic classification process of identifying themes and elements identified in the model.

4.15 Approaches to Qualitative Content Analysis

Qualitative content analysis involves a process designed to condense raw data into categories or themes based on valid inference and interpretation. This process uses inductive reasoning, by which themes and categories emerge from the data through the researcher's careful examination and constant comparison. But qualitative content analysis does not need to exclude deductive reasoning (Patton, 2002). Generating concepts or variables from theory or previous studies is also very useful for qualitative research, especially at the inception of data analysis (Berg, 2001).

Hsieh and Shannon (2005) discussed three approaches to qualitative content analysis, based on the degree of involvement of inductive reasoning.

The *first* is conventional qualitative content analysis, in which coding categories are

derived directly and inductively from the raw data. This is the approach used for grounded theory development.

The *second* approach is directed content analysis, in which initial coding starts with a theory or relevant research findings. Then, during data analysis, the researchers immerse themselves in the data and allow themes to emerge from the data. The purpose of this approach usually is to validate or extend a conceptual framework or theory.

The *third* approach is summative content analysis, which starts with the counting of words or manifest content, then extends the analysis to include latent meanings and themes. This approach seems quantitative in the early stages, but its goal is to explore the usage of the words/indicators in an inductive manner.

This research is thus based on summative qualitative content analysis because the words used by Indian firms are not exactly the same but are extremely similar. Hence it was pertinent to understand the manifestation of messages embedded in the usage of words which implied reporting on various elements of Intellectual Capital.

4.16 Process of Content Analysis

All approaches to qualitative content analysis require a similar analytical process of seven classic steps, including formulating the research questions to be answered, selecting the sample to be analyzed, defining the categories to be applied, outlining the coding process and the coder training, implementing the coding process, determining trustworthiness, and analyzing the results of the coding process (Kaid, 1989).

This process differs slightly depending on the specific content analysis approach used. The success of a content analysis depends greatly on the coding process. The basic coding process in content analysis is to organize large quantities of text into much fewer content categories (Weber, 1990). Categories are patterns or themes that are directly expressed in the text or are derived from them through analysis. Then, relationships among categories are identified. In the coding process, researchers using content analysis create or develop a coding scheme to guide coders to make decisions in the analysis of content. A coding scheme is a translation device that organizes data into categories (Poole & Folger, 1981). A coding scheme includes the process and

rules of data analysis that are systematic, logical, and scientific. Codes used by earlier researches have been adopted for this research.

4.17 Using Conventional Content Analysis as a means to Model Development

The conventional approach to content analysis is limited in both theory development and description of the lived experience, because both sampling and analysis procedures make the theoretical relationship between concepts difficult to infer from findings. At most, the result of a conventional content analysis is concept development or model building (Lindkvist, 1981). **Thus this research follows a conventional qualitative content analysis to build a model.**

4.18 Using Summative approach to Content Analysis

A summative approach to qualitative content analysis goes beyond mere word counts to include latent content analysis. Latent content analysis refers to the process of interpretation of content (Holsti, 1969). In this analysis, *the focus is on discovering underlying meanings of the words or the content (*Babbie, 1992; Catanzaro, 1988; Morse&Field, 1995).

Researchers report using content analysis from this approach in studies that analyze manuscript types in a particular journal or specific content in textbooks. It allows for interpretation of the context associated with the use of the word or phrase. Researchers try to explore word usage or discover the range of meanings that a word can have in normal use.

A summative approach to qualitative content analysis has certain advantages. It is an unobtrusive and nonreactive way to study the phenomenon of interest (Babbie, 1992). It can provide basic insights into how words are actually used. However, the findings from this approach are limited by their inattention to the broader meanings present in the data. As evidence of trustworthiness, this type of study relies on credibility.

This research follows a summative directed conventional qualitative content analysis.

4.19 Using Directed approach to Content Analysis

This research includes content analysis as per the codes developed in the framework

and also a detailed description of elements which did not fall into the codes but were pertinent to the topic of study. The findings from this directed content analysis offered supporting evidence for the theoretical framework developed through the research.

4.20 A review of the Use of Content Analysis of Annual Reports in the Intellectual Capital Literature

Content analysis of annual reports is a technique for gathering data and has been used, and held to be empirically valid in ICR research (Gray et al., 1995b; Guthrie and Parker,1990). It involves codifying qualitative and quantitative information into pre-defined categories in order to derive patterns in the presentation and reporting of information. Annual reports have been used to investigate the ICR practices of firms (Bozzolan et al., 2003; Brennan, 2001; Guthrie et al., 1999, 2003; Olsson, 2001), and also to investigate the differences in reporting across firms in different countries (Subbarao and Zeghal, 1997). Content analysis has been commonly used in the social and environmental reporting literature to evaluate the extent of disclosure of various items (i.e. Guthrie and Mathews, 1985; Guthrie and Parker, 1990; Zeghal and Ahmed, 1990; Hackston and Milne, 1996). Prior studies in the social and environmental reporting literature, which examined both the amount of disclosure and the quality of the data disclosed (Deegan and Gordon, 1996; Deegan and Rankin, 1996; Gray et al., 1995b; Guthrie and Parker, 1990; Hackston and Milne, 1996) have defined the quality aspect of disclosures.

Intellectual Capital Disclosures studies carried out in Australia (Guthrie and Petty, 2000), Ireland (Brennan, 2001), Italy (Bozzolan et al., 2003), and Sri Lanka (Abeysekera and Guthrie, 2004, 2005) have all used annual reporting as their source document, with content analysis as their methodology for analyzing the relevant information. Content analysis of annual reports and other written material has been widely used in accounting research.

This approach not only provides a description of the disclosure practices of organisations, but also indicates the key issues that need to be focused on in subsequent in-depth investigations on how these organizations identify, measure, and report their Intellectual Capital. A number of studies have used this method to examine voluntary and mandatory annual report disclosures in different countries (for

literature reviews see, e.g. Guthrie et al., 2004; Roslender and Fincham, 2004). Studies of disclosures use several arguments for using annual reports in disclosure studies; it is a major medium for communicating information to stakeholders, it is produced regularly, the company has a substantial editorial input into it and it is widely distributed and read (Campbell, 2004).

Guthrie et al. (2004) point out that content analysis of annual reports has emerged as the most popular research method of ICD studies in recent years

Researchers in Australia were early adopters of content analysis as a method to examine organisational practices in managing and reporting Intellectual Capital. Guthrie and Petty (2000) carried out a content analysis of the annual reports of the 20 largest Australian listed companies (by market capitalisation) in an attempt to understand the extent to which these companies report their Intellectual Capital.

The authors used a framework developed by Sveiby (1997), which categorises intangibles according to whether they relate to an organisation's internal structure, external structure, or the employee competence within an organisation. Using this framework, it was found that the key components of Intellectual Capital are poorly understood, inadequately identified, inefficiently managed and inconsistently reported.

Brennan (2001) carried out a similar study of companies in Ireland. The author analysed the annual reports of 11 listed companies and ten private companies. The author used an identical framework to code data for the content analysis of annual reports as that used by Guthrie and Petty (2000), and reported results similar to the Australian study.

However, the cultural and other cross-country differences mean the findings of the study are not meaningfully comparable with Guthrie et al. (1999). A study by Olsson (2001) examined the annual reports of the 18 largest Swedish companies, selected on the basis of market capitalisation in the Swedish stock market. Olsson (2001) developed a list of five elements to ascertain the level of human capital reporting. The study found that none of the companies used more than 7 per cent of reporting space to deliver human resource information in their annual reports. Furthermore, the

information that was reported was found to be highly deficient in either the quality or extent of the disclosure.

This research is very similar to the study conducted by Olsson to study the overall reporting of Intellectual capital in the annual reports of Top 4 companies as per their market capitalization.

4.21 Data Set from Annual Reports

Annual Reports have been used to investigate the Intellectual Capital reporting practices of firms, and also to investigate the differences in reporting across firms in different countries. Researchers in the field of ICR have, according to Parker (2005), used content analysis as the dominant research method for collecting empirical evidence. The traditional, statutory formal communication vehicle between a publicly listed corporation and its interested constituencies is the corporate annual report. As formal communication documents, annual reports commonly comprise quantitative information, narratives, photographs, tables and graphs.

A certain order has evolved in which to disclose these and the required accounting information. The dominant theme of these voluntary disclosures was corporate social reporting (CSR), being largely concerned with corporation's interactions with the natural environment, employees, communities and customers (Stanton and Stanton, 2002). Disclosures are increasing, particularly among larger companies within environmentally sensitive industries (Deegan and Gordon, 1996). By theme, CSR disclosures appeared reasonably consistent (Robertson and Nicholson, 1966) across all countries (Hackston and Milne, 1996; Robert, 1991), with disclosures relating to human resources, environment and community, in that order, receiving most attention (Zeghal and Sadrudin, 1990).

Since 1965, annual reports have grown in volume (Lee, 1994), although their size appears to have stabilized (Marino, 1995). Cover treatments focused on color photographs (Marino, 1995). Narratives are giving way to pictorial forms, with an increasing emphasis on product related matter designed to influence stakeholders. Design consultants, employed as image managers, create explicit images (e.g., company logos) and complement them with high-resolution color, merged or fused pictures and narrative messages (Lee, 1994). Most reports carry a theme, commonly

related to customers or employees. The front half is organized by line of business. with CEO's letter prominent (Marino, 1995).

The growth in voluntary disclosures, increasing narrative, and the consignment of statutory financials to the rear (Lee, 1994), provide the means by which management can report corporate achievements, and can facilitate/mould readers' expectations about the reporting corporation.

4.22 Data Sourcing

This was important to supplement as well as to compensate for the limitations of other methods. Documentary evidence acts as a method to cross validate information gathered from observation given that sometimes what people say maybe different from what people do. Official and unofficial documents and records pertaining to the process of all activities in the organizations were analyzed.

Thus, corroboration of multiple qualitative techniques for this case studies research helped to enhance the validity and reliability of findings. This research tries to develop case studies on the basis of all publicly available information about the company. It has been a type of qualitative content analysis which has been conducted on annual reports and all voluntary disclosures made by the firms.

In the Indian context though the annual reports have a standard format but the terminologies used to represent similar assets has been quite diverse. Pure quantitative content analysis hence could not lead to convincing results. Conventional qualitative content analysis has been used for building case studies around a basic framework for mapping the disclosures made by the firms on their intangible assets and intellectual capital. During this research raw data has been used to generate elements that can be used to classify components for reporting Intellectual Capital.

4.23 Research Process

Content Analysis involved development of coding framework followed by qualitative summative directed content analysis of annual reports of 4 companies. The information from the reports was placed in the framework to allow interpretation of the information along the elements identified in the framework. The level of existence of information along each element was used as the basis for analyzing the level of

disclosures made by the firm on their Intellectual Capital.

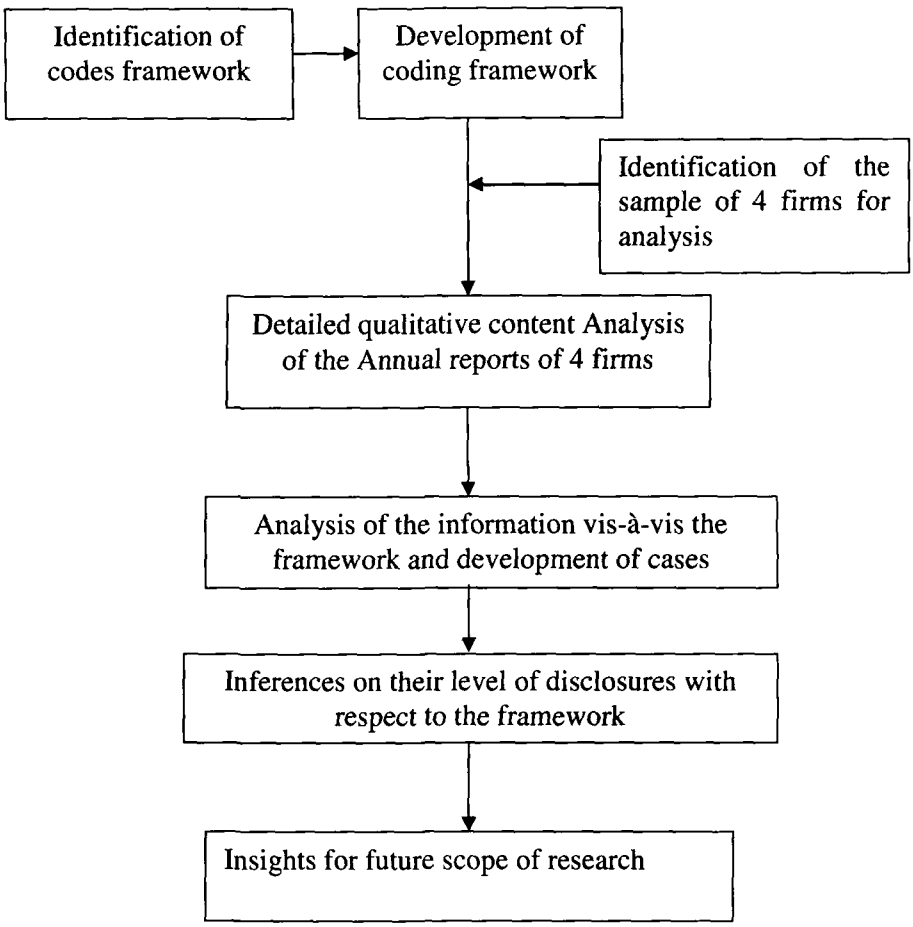


Figure 4.1 The Research Process

4.23.1 Step 1 - Development of the Coding framework

There are a variety of conceptual frameworks that can be used to classify and record Intellectual Capital. In the work of Guthrie and Petty, 2000 an existing framework was modified and then it was re-modified further in 2003. The most recent framework for Intellectual Capital elements was developed by Brooking (1996) and adopted and modified by the Australian Society of CPAs and the Society of Management Accountants of Canada (1999, p. 14). **It was combined with the Guthrie and Petty (2000) framework to produce a slightly modified structure with three main categories and eighteen elements.**

- **Internal Capital** includes the systems, policies, culture and other "organizational capabilities" developed to meet market requirements.
- **External capital** covers the connections that people outside the organisation have with it, and

Human capital includes the know-how, capabilities, skills, and expertise of the employees.

4.23.2 Step 2 Identification of the Unit of Analysis

The unit of analysis refers to the basic unit of text to be classified during content analysis. Messages have to be classified as units before they can be coded, and differences in the unit definition can affect coding decisions as well as the comparability of outcomes with other similar studies (De Wever et al., 2006). Therefore, defining the coding unit is one of the most fundamental and important decisions (Weber, 1990).

Qualitative content analysis usually uses individual themes as the unit for analysis, rather than the physical linguistic units (e.g., word, sentence, or paragraph) most often used in quantitative content analysis. An instance of a theme might be expressed in a single word, a phrase, a sentence, a paragraph, or an entire document. When using theme as the coding unit, one is primarily looking for the expressions of an idea (Minichiello et al., 1990). Thus, one may assign a code to a text chunk of any size, as long as that chunk represents a single theme or issue of relevance to the research question(s). **The units for this research have been defined on the basis of all past researches in the field of Intellectual Capital Reporting and Disclosures**

4.23.3 Step 3 Description of Unit of Analysis

Content analysis requires the selection of a unit of analysis. Gray et al. (1995b) posit that sentences are preferred in written communication if the task is to infer meaning. Most social and environmental reporting content analyses use sentences as the basis for coding decisions. Using sentences for both coding and measurement is likely to provide complete, reliable and meaningful data for further analysis (Milne and Adler, 1999).

Another unit of analysis is the paragraph. The paragraph method is more appropriate

than word count in drawing inferences from narrative statements as we commonly establish meaning with paragraphs rather than through the reporting of a word or sentence. Usually the amount of disclosure is measured by counting the frequency at both the category and element levels. An organisation's overall index is calculated according to the total amount of information disclosed. Disclosure indexes are often also calculated for each category.

Unerman (2000) has usefully presented arguments for measuring the volume of social and environmental reporting disclosures in terms of the proportions of a page, taking into account non-narrative social and environmental reporting disclosures (e.g. charts, tables, photographs).

In the literature, there is a continuing debate on which unit of analysis that should be used in annual report content analysis (Gray et al., 1995; Deegan and Rankin, 1996; Milne and Adler, 1999; Beattie et al., 2004). The debate centers on the most effective way of inferring reporting intent from volumetric data (Campbell, 2004). Much focus is on whether words, sentences or pages should be used. According to Williams (1999), the literature does not provide an overwhelming justification for any of the three units of analysis. However, the use of words and/or sentences seems to be preferred by most researchers. **This study used both words and sentences as units of analysis.**

In addition to the number of words and sentences, some quality aspects of disclosures also need to be covered in the study (Guthrie et al., 2004). These were reporting topic and forms of evidence (the existence of monetary data, numerical data, and of tables and charts). The existence of quantitative and monetary data (hard data) could be an indication of higher importance of an item, since companies are likely to use more resources in gathering hard data rather than only providing text. Tables and charts may be provided instead of text by some companies, which is why such measures were also included (Marston and Shrives, 1991). Pictures were excluded from the study because of measurement problems (Wilmshurst and Frost, 2000; Guthrie et al., 2004). **Charts describing processes have been used to understand disclosures.**

4.23.4 Step 4 Data Coding.

The Intellectual Capital literature has convincingly coded voluntary reporting to

analyse elements and location of Intellectual Capital in source documents (Abeysekera and Guthrie, 2004a, b, 2005; Olsson, 2004). The Intellectual Capital information collected from the reading and analysis of annual reports is coded onto coding sheets which is the framework that has been developed. Each item is coded according to the section under which the item appears. The nature of disclosure is categorized as either qualitative or quantitative, and the incidence of occurrence (i.e. number of paragraphs) is generally noted. The coding was rechecked using past researches to ensure coding consistency. **Since the codes have been directly taken from a number of past researches their usage for analysis has been tested for reliability and validity.**

4.23.5 Step 5 Development of caselets

4 cases from the top 4 firms of India as per their market capitalization for the year 2009-10 have been developed.

One firm Reliance Industries was chosen to represent the largest private sector company. Second firm ONGC was chosen to represent the largest public sector companies. Third firm Infosys was chosen to represent firms which have created the maximum intangible assets and have been lauded for their disclosures. The fourth firm chosen was MMTC to represent the services sector as it is largest trading company in India.

4.23.6 Step 6 Draw Conclusions from the Coded Data

This step involves making sense of the themes or categories identified, and their properties. At this stage, there were inferences made and meanings derived from the data were reinterpreted. This analysis involved exploration of properties and dimensions of categories, identification of relationships between categories, uncovering patterns, and testing categories against the full range of data (Bradley, 1993). This was a critical step in the analysis process, and involved utilization of reasoning abilities. It was found that the framework used for the process was more or less appropriate for the analysis of disclosures on Intellectual Capital.

4.24 Managing Size and industry effects while collating data

This research has attempted to cover a variety of large firms from diverse industries. Recently, Bozzolan et al. (2003) found a significant size and industry effect on reported Intellectual Capital disclosures using Italian data. Previous research shows that in social and environmental reporting (social and environmental reporting) the size of companies in terms of total assets and total sales is an important variable for most areas of voluntary reporting (Gray et al., 1995a, p. 62).

Prior studies in the social and environmental reporting literature (Cowen et al., 1987; Patten, 1991, 1992; Roberts, 1992) have also found that industry influences the amount of social and environmental reporting disclosure. Some industries are more likely to disclose in certain areas of social responsibility because they are subject to greater governmental pressure to provide such information (Cowen et al., 1987).

The effect of size and industry variables should be a consideration in developing the instrument to be used for the content analysis. However, to date few studies have modified the coding instrument in an effort to control size and industry effects across a sample of companies. The generalised nature of most coding forms is clearly a limitation on the accuracy of results. Introducing greater situational specificity into the coding process represents an avenue for improvement.

4.25 Ensuring effectiveness of Content Analysis

For content analysis to be effective, certain technical requirements should be met (Guthrie and Mathews, 1985). First the categories of classification must be clearly and operationally defined. Second, objectivity needs to be maintained i.e., it must be clear that an item either belongs or does not belong to a particular category. Third, the information needs to be able to be quantified. Finally, a reliable coder is necessary for consistency. All these issues have been taken care of while conducting this research because the codes have been used earlier and the documents are the only source which have been quoted or used and actual usage of words has been studied while placing them in any category.

4.26 Limitations of the research process adopted

1. There could be limitations in using content analysis related to the reliability of both the data and the instrument used. (Gray et al., 1995b; Milne and Adler, 1999; Unerman, 2000; Deegan and Rankin, 1996; Frost and Wilmshurst, 2000; Milne and Adler, 1999.)
2. Second, the composition of the sample in a given study can influence its findings. The same coding framework to analyze ICD, could give different results for a number of reasons, including the composition of the sample, making it difficult to accept the credibility of these comparisons. **This research does have the limitation of a small sample.**
3. Third, there are issues relating to the operationalizing of content analysis. These include how to deal with sentences or paragraphs that give rise to more than one intellectual capital item or "attribute". One or more Intellectual Capital attribute can give rise to an Intellectual Capital category such as human capital, internal capital, and external capital. Additionally, there are issues related to how one would convert non-narrative information such as pictures, charts, tables, and numerical figures (both fiscal and non-fiscal) into a quantitative form to be analyzed by content analysis. Thus operational definitions can give rise to differences in both results and interpretation.

4.27 Limitations of using Annual Reports as data source

Besides the above aspects of content analysis, the content analysis of annual reports suffers from a few more limitations.

1. There may be an incomplete representation of disclosure practices which leads to incomplete analysis of facts presented in the reports.
2. This study has focus on a single year's annual report. Future studies could explore supplementary other inter corporate communications channels such press releases, brochures, and presentations to analysts to further enhance the scope of this work. This research has tried to include all information available at a point in time but with passage of time there may have been an increase of

information which may have not been included.

3. The study has not explored anything beyond the framework. This analysis may not be in a position to measure in detail what components of Intellectual Capital would actually have led to all that was performed in the organization.

Future research could utilize complementary or competing theoretical perspectives on voluntary disclosure.

4.28 Conclusions

Given the wide variety of types of companies and industries in India it is difficult to cast Intellectual Capital in a fixed mould. In order to analyze the voluntary disclosures made by the firms Case based approach was best suited given its flexibility to collect data and the variety of sources that could be deployed for analysis. The cases based research has also attempted to do a little bit of content analysis to understand and map the disclosures across common parameters if any. The parameters have then been used to formulate some constructs which would finally lead to the comprehensive understanding of Intellectual capital Reporting and Voluntary disclosures in India.

This research has used previously used codes for a summative qualitative content analysis of annual reports and other public documents to assess the voluntary disclosures made by the firm. The disclosures have then been mapped towards development of a framework which can be used to formalize the reporting of Intellectual Capital in Indian companies. This framework has also been supported by developing cases which provide additional information on how Indian companies report and how these inputs can be used next to enrich the model in future.

Chapter 5

Findings and Discussions

5.0 Introduction

This research was aimed at understanding the impact of reporting and disclosure of Intellectual Capital on enterprise valuation. In India there is no regulation or prescribed format for, disclosing Intellectual Capital. With this miasma around the conceptualization and subsequent integration of Intellectual Capital in corporate reporting in India, this study was focused on understanding all information that is disseminated by the firms. This information was then analyzed if it was in some way or the other akin to Intellectual Capital.

Most or all of the information that is disclosed by the firm is related to its annual financial statements which are compiled in the form an Annual Report. This annual report has all the mandatory annual financial statements supplemented by support documents and some additional information. As a part of this supplementary information, Corporate Governance Report has been made mandatory by the legal regulatory authorities.

It has been observed that besides the mandatory clauses of the Annual Report, most of the firms give some additional information on their overall functioning of their firms. The information provided in these reports is more related to activities conducted to fulfill corporate social responsibility or in other words activities directed at improvement and benefit of the society.

5.1 Observations during Research

This research involved developing case studies of top 4 companies with higher market capitalization using a reporting framework which would help in analyzing the disclosures made by the firms which would help them gain a leverage in the market and maintain their market value. In the process of conducting a detailed qualitative content analysis of the annual reports it was found that the framework was more or less useful as except one all the elements were reported in some form or the other. Besides these other elements there were a few elements which were very commonly

talked about which could be included in the framework in order to make it richer and more comprehensive.

5.1.1 Corporate Social Responsibility

During the research it was discovered that corporate social responsibility is a widely used term by corporates in India and abroad. The details on CSR more often than not contain information on activities conducted by the firm to gain a good social reputation. This social reputation is mostly earned by doing some helpful work for society which is not directly linked to its profitability. In fact anything that promotes the direct profitability of the firm **is not considered CSR.**

5.1.2 Responsibility Towards Environment and Stakeholders

Corporate social responsibility is considered doing some philanthropic activities to help society at large, but firms also consider it is more than that. It is aimed at benefiting all stakeholders including the provider of resources – nature. Corporate social responsibility activities though aim at earning an image and a reputation of being a socially responsible organisation for the firm these activities themselves have also gained magnanimity and thus have become a bridge between creation of value and distribution of its benefits to all stakeholders.

5.1.3 Disclosures on All Activities Rendered to the Service of Society

Any activity that is for the service of society or more specifically the external stakeholders was disclosed. Supplementing financial statements is necessary because unless information is disclosed the stakeholders cannot be made aware of the activities undertaken by the firm. These disclosures not only keep the stakeholders satisfied but also build a strong reputation as a socially responsible firm.

5.1.4 Economic Value Added Instead of Net Profit

Another observation was that besides corporate social responsibility firms feel the need to show higher profitability, because higher profitability symbolizes enhanced earnings for shareholders. But the firms do not report values of Economic Value Added which is a more accurate measure to report profitability, because it allows to reduce the cost of capital from the overall profit hence gives a more realistic and conservative value to the profits. It was observed that most firms which rated high on profitability did not rate equally high on the Economic Value Added.

5.1.5 Intangible Assets

Intangible assets are not reported using the term intangible assets in most of the firms. Infosys does report an Intangible Asset Balance Sheet. If other firms have reported Intangible Assets then term Intellectual Property or Patents is used more often because it is easily expressed using financial figures. This is possible because all the patents and IPRs have a given market value which changes over time and thus can be amortized like all other intangible assets.

5.1.6 Goodwill

Good will is the most popularly used term in Balance Sheets signifying Intangible assets. But it is highly inadequate as it only deals with social reputation and internal value created by the firm is ignored entirely in the process. Most of the firms thus show goodwill on their balance sheet, but it is essentially amortised over the years as decided by the firm instead of being capitalised.

5.1.7 Brand Value

There are a number of methods of calculating brand value and a few firms use these models to calculate brand value but it is not prevalent as a practice.

5.1.8 Human Capital

Firms have started recognizing human capital and often use this term, but human capital is not reported commonly using accurate numbers. Some firms though use Lev and Schwartz model to calculate Human Capital in numerical figures again.

5.1.9 Value Added Per Employee

Infosys has used this term and a few more IT, ITES firms use this to analyze their human capital because it is their human capital which is their strength which they like to highlight. But firms which are into manufacturing or trading do not tend to use this term because it does not highlight their key result area because their key result areas are either physical resource base or their processes which are more independent of human intervention.

5.1.10 Human Resource Development

Instead of human capital, human resource development and training and development are more widely used terms. Almost all the firms feel the need to show training and development as a part of their human resource management. The firms have allocated budgets for training and development of human resource hence it is a part of their

annual financial statements. The inherent underlying philosophy could be that unless the human resource is trained the productivity may go down.

5.1.11 Welfare

Welfare is the most commonly used term in annual reports where they have listed all philanthropic activities that have been undertaken by the firm.

5.1.12 Research and Development

Besides human resource development which is more commonly referred to as training, research and development have been an essential part of annual financial statements. But like all other intangible assets, research and development costs are not capitalized and they are rather amortized by all firms.

5.1.13 Value Created

Taking the development aspects a little further the concept of value has been discussed in all reports but in different contexts. Infosys has given their value chain model in great detail and has also demonstrated how they create value through knowledge management.

5.1.14 Knowledge Creation

Knowledge capital in the firms has been reported in different forms by most of the firms. But it is in terms of knowledge base that is manifested in new products and new product ideas. All firms demonstrate that they try to earn a better reputation if they disclose about their future plans and share their new ideas.

5.1.15 Focus on Child Education

All the firms have emphasized on education as the key area where they want to focus their resources and attention. This is an essential element of all philanthropic activities undertaken by the firm.

5.1.16 Innovations

Innovations is not a very frequently used firms. Infosys has developed a SET Lab which demonstrates and talks about Innovation Co-Creation. But most of the firms disclose new ideas but do not use the term innovation.

5.1.17 Sustainability

The term corporate sustainability has been used by the firms but it is directly related to its future plans. It is used in the context of future profitability and is used more as a reassurance tactic to stakeholders.

5.1.18 Awards

All the firms have shared details on all the awards that have been won by the firm and this has helped them establish authenticity in their reports and invoke trust in the quality of activities undertaken by the firm.

5.1.19 Values, Mission, Vision

All firms have stated these in their annual reports and have used terms which are convincing on quality of product and services.

5.2 Specific Insights from Cases

5.2.1 Infosys

Infosys has done extensive research and promotes it a lot in the field of innovation in software engineering and technology. They have separate labs to understand and monitor human resource development, innovation management and innovation co-creation.

As per the company's annual report, the intangible assets can be classified into four major categories: **human resources, intellectual property assets, internal assets and external assets.**

Human resources represent the collective expertise, innovation, leadership, entrepreneurship and managerial skills of the employees of the organization.

Intellectual Property assets include know-how, copyrights, patents, products and tools that are specific to an organization. These assets give the organization a unique advantage over its competitors.

Internal assets are systems, technologies, methodologies, processes, and tools that are specific to the organization. These assets give the organization a unique advantage over its competitors in the marketplace. These assets are not licensed to outsiders e.g., methodologies for assessing risk, managing projects, risk policies and communication systems.

External assets are market related intangibles that enhance the fitness of an organization for succeeding in the marketplace.

Infosys gives a detailed report on Intangible assets unlike any other firm. It is able to do so because of the huge efforts that have been put into the establishment of intangible assets.

5.2.2 MMTC

MMTC being a trading company has made significant efforts in establishing facilities to foster smooth and faster transactions, like establishing of commodity exchanges. Besides these facilities the employees are also being trained for better management of their processes. Since it is a service oriented firm the emphasis is on improvement of service quality and efficiency. Also because it is trading in all commodities including precious metals the stakes are high and hence necessitate improvement in processes. The firm is venturing into retailing of precious metals to expand the scope of its services and take advantage of vertical integration.

5.2.3 ONGC

The firm is the largest public sector refinery. Since it is a process oriented organisation the emphasis is on improvement of quality of service. It provides detailed valuation of human resource using Lev and Schwartz model. The firm has given special focus on education for its executives to improve overall efficiency of work. Since it is a refinery environmental protection is a one of the major areas where the firm is focused on improving its processes and products. The firm discloses its efforts in the form of value multiplier projects which are a endeavour to improve value created and delivered.

5.2.4 Reliance Industries Ltd

It is the firm which holds the largest market capitalization. The firm is a private sector refinery hence the report harps on sustainability strategy. Social welfare and community development are the heart of all its corporate social responsibility initiatives. The firm talks about Reliance Innovation Council, RIL has set up the Reliance Innovation Leadership Centre. The efforts towards innovation and sustainability take the most of voluntary disclosures that the firm has done. The report does discuss human assets but only from human resource development perspective. Nothing towards valuation is discussed and also no other intangible asset is reported.

5. 3 Analysis and Interpretations

Most of the firms did report on the elements that were a part of the framework either in clear and accurate words and using same terms or using synonyms but conveying the only elements like – ***IP, Franchise and Stakeholder Resource*** have not been used by the firms explicitly or implicitly in their annual reports.

This could be because the term IP is used less and Patents is used more often. All the firms were either refinery or IT Service provider or a trading firm hence the use of franchise was neither needed nor expected. The term stakeholder is not a very commonly used term in the Indian reporting system. Though they talk of almost all elements of society that they feel related to directly and indirectly but they do not use the term Stakeholder Resources. Cumulative results as per the Framework are given next in order to give a snapshot of the comparative analysis using the reporting framework across the firms used as research sample.

		RELIANCE	INFOSYS	MMTC	ONGC
Human Capital					
	Training and development expenses per employee	RIL continues to invest in people through various Learning & Development initiatives, which has seen 3,092,403 man hours of Learning & Development activities at manufacturing divisions. E-learning as a medium is much sought after by the employees for upgrading skills and competencies since people can learn when needed at their own convenience and from where they may be. The Company has continued to invest in this area through newer and state-of-the-art modules both in the Technical and Management domains.	Recruitment and training Rs 6 Crores in 2009 and Rs 2 Crores in 2010. Billed Training expenses – Rs 92,081 Crores Each director is entitled for a training fee of US $5,000 per annum	The employees deputed for training included 150 employees belonging to SC, 66 to ST and 229 women employees. In terms of man-days such training works out to 2428 training man days during the year 2008-09. Training and development expenses Rs 5.76 million	Expenditure on Employees 47,396 Million Rs Number of Employees 33,035

	Benefits from training exercises	In FY 2009-10, 105 Six Sigma projects were completed leading to financial benefits (annualised) amounting to Rs. 55 crore.	Value added per employee - 0.19 Crores Value added per software professional - 0.20 Crores	NO INFORMATION	Created awareness as part of energy conservation by providing training on Energy conservation techniques to 12389 employees of ONGC at several cities. It is expected that by imparting this training they can bring down the energy bills by 20%
	Image of company from employees perspective	Their employee satisfaction is reflected in the stability of their senior management, low attrition across various levels and substantially higher productivity.	Ranked as 14th most respected company in the world by reputation institute. The firm's reputation as a premier employer enables them to select from a large pool of qualified applicants. In Fiscal 2009, they received approx. 4, 88,700 applications and added 12,400 new employees net of attrition excluding the BPO.	Cordial and harmonious industrial relations continued to prevail in your company with no man-days being lost during the year. MMTC has stated that they realize that their most important asset is the employee. They have designed our HR policies to meet the above objective	Ranked at top of the Best companies to work for in Core Sector by Business Today in Feb 2010 edition. Golden Peacock Global Award 2007 for Excellence in Corporate Governance 2009", conferred by World Council of Corporate Governance, London. Bagged "BML Munjal Award" for

					Excellence in Learning & Development in Public Sector category.
	IP Assets	The Intellectual Property Right (IPR) has been filed in the area of Polypropylene in addition to the assignment of 3 Patent Cooperation Treaty (PCT). 2 Indian trade mark applications for Catalyst System and Process for Polyolefins have also been filed. RIL has been awarded the Arch of Excellence and the Rashtriya Ratan Award during the year for achieving technological excellence.	IPRs worth Rs. 12 Crores Intellectual Property assets include know-how, copyrights, patents, products and tools that are specific to an organization. These assets give the organization a unique advantage over its competitors.	NO INFORMATION	**Patents** a. Patent has been filed for "Composition and method for dissolution of Strontium Sulphate scales"(No. 1752/MUM/2008 dated 19th Aug 2008), by IOGPT. b. A Process for treatment of oily effluent produced by petroleum oil industries (under Patent no. 209854, 7 Sep 2007) is being commercialized with its possible applications in KOC's fields. Intangibles –

					Software - Rs 4,741.25 Intangible Assets Costs incurred on intangible assets, resulting in future economic benefits are capitalized as intangible assets and amortized on written down value method beginning from the date of capitalization. Cost of Right of way for laying pipeline is capitalized as intangible asset and being perpetual in nature is not amortized.
	Knowledge /Skill	For sustainability, the talent pipeline is fed by a supply chain of best-in-class nurtured home-grown talent through relevant skill and competency development programs. Second, hire top talent through concerted	The Project Management Centre of Excellence helps employees enhance project management competencies and have trained over 2934 managers and more than 28120 employees were awarded technical	NO INFORMATION	

		efforts from premier technology and management institutions. Third, retain talent by putting in place a performance-oriented Employee Stock Option Plan, the largest in the country. Further, in a collaborative effort, the firm is working with leading educational institutions to help build more robust and industry-oriented programs. In all these endeavors, there is trust placed in youth. This, in turn, brings vigor and dynamism to our organisation. It also sets in a process of creating a new generation of young Reliance leaders.	certifications this fiscal year. The Enterprise solutions Academy has trained 29667 employees since its inception and Infosys Leadership Institute offered nearly 3, 43,000 person days of learning last year.		

	Innovation Capital	Traditionally, Reliance has done very well in process innovation, business model innovation and management innovation. The world has recognized this and applauded it. Early this year, Reliance was ranked 19 amongst the top 50 innovative companies in the world by *Business Week*, a leading US magazine. To serve the Reliance Innovation Council, RIL has set up the Reliance Innovation Leadership Centre in Pune. The mandate of this centre is to implement the innovation agenda of RIL. The innovation agenda hinges around 4 key elements. Build innovation leaders of today and tomorrow within RIL; Deploy best and next	Innovation Lab focusing on leveraging Information Communication and Technology to innovate and co-create with our clients. SETLabs has invested R&D efforts to show its commitment to sustainable innovation The ACM-Infosys Foundation Award jointly with the Association of Computing Machinery for the recognition of young scientists and system developers whose contemporary innovations have an impact on the computing field.	A user friendly intranet based Knowledge Management Solution has been made available to officials.	Golden Peacock Eco-innovation Award 2008 for development of 'Eco-friendly Defoamer'. (January 2009)

		transformational innovative practices that will impact the country and the business; Develop new business based on emerging and disruptive technology; Strategically deploy a corporate venture capital fund to maximize value The Centre acts as a catalyst in providing leadership and support to the business of RIL by harnessing cutting-edge, futuristic but practical, science, technology and innovation initiatives from both within and outside the organization. It will serve as a Nerve Centre with the sole quest of propelling RIL to the forefront of global business leadership. Growth through			

		Innovation The firm believes that growth through innovation will give it a big competitive advantage and will be a key differentiator. The goal is to make RIL one of the most innovative companies in the world and to achieve breakthrough growth in revenues and profits by creating and implementing sustainable solutions. The firm is developing an innovative ecosystem that builds on organisational systems and processes, talent management, open innovation and world class R&D facilities.			
	Discovery	Reliance, in a span of 9 years since inception in the Exploration and Production business, made the largest Gas Discovery in the year	Business results Impact @ Infosys Technologies BrITe uniquely blends IT specific Six Sigma approach with	NO INFORMATION	ONGC's exploratory efforts in this direction have led to another CBM discovery in Bokaro during FY'09. Pilot

		2002 and has since commissioned India's first and one of the World's largest deepwater gas production facilities. Currently Reliance is India's largest gas producer. The first oil discovery was made in the on land exploratory block CB– ONN–2003/1 (CB 10 A&B) in the Cambay basin awarded under the NELP-V round of exploration bidding. RIL holds 100% Participating Interest (PI) in this block. The discovery, named 'Dhirubhai–43' has been notified with the Government of India. The Company also made its third successive gas discovery in the exploration block KG-DWN-2003/1 (KGV-D3) of NELP-V. This	statistical predictive modeling to address diverse business critical parameters to provide breakthrough improvements.		CBM production from its earlier discovery in Parbatpur is expected to commence this year. The Company is operating in 5 CBM Blocks i.e., Jharia, Bokaro, North Karanpura and South Karanpura Blocks in Jharkhand and Raniganj Block in West Bengal. Significant new discovery has been made in CBM block BK-CBM-2001/1 in the state of Jharkhand. Pilot CBM production from its earlier discovery in Parbatpur is expected to commence this year.

		discovery, named 'Dhirubhai–44' has been notified with the Government of India.			
	Employees and Employee competence	Employee cost was Rs. 2,350 crore ($ 523 million) for the year as against Rs. 2,398 crore. The current year figure includes Rs. 20 crore towards expenditure incurred on Voluntary Retirement Scheme/Special Separation Scheme announced for the employees of certain units. Corresponding previous year figure was Rs. 111 crore. The Reliance Technology Group (RTG), created by consolidating various research and technology functions is helping create enhanced value delivery by leveraging all the skills and competencies, and	Total employees 1,04,850, Staff education index – 2,72,644, Value added per employee 0.2 Crore , Attrition 11.1%	NO INFORMATION	Total Value of employees – Rs 385,169.2 Million Value per employee - 11.7 Million

		creating new opportunities at the interfaces.			
	Human resources and Human resource practices	RIL's talent base, as on March 31, 2010, stands at 23,365 with the average employee age of 41 years. The aim is to lower the average employee age and invigorate the youth to take the organisation forward over the next few decades as indeed the current leaders have done over the last 30 years by starting early in their 20s and 30s. The entrepreneurial spirit has been a hallmark of the organisation. The Company continues to nurture this as it grows exponentially. Reliance's occupational health centers carry out pre-employment and periodic medical checkups as well as other routine	The Infosys Leadership Institute is the hub of Infosys' talent development program. During the year, we implemented the Infosys Role and Career Enhancement (iRACE) program. iRACE aligns talent management activities with client priorities, business needs and employee aspirations. Human resources represent the collective expertise, innovation, leadership, entrepreneurship and managerial skills of the employees of the organization.	NO INFORMATION	Human Resource Development (HRD) has always been one of the constantly focused action point for the management of the Company. The practices adopted under HRD concentrate on nurturing and developing talent for the core activities of the organization. Due to these endeavours, the Company has the finest pool of Scientists, Engineers and Professionals. Retaining talent has always been a challenge; however, with innovative practices the Company has been able to restrict

		preventive services. Specialised tests like biological monitoring, health risk assessment studies and audits for exposure to various materials are also performed. Health education and awareness form an integral part of the health care programme at Reliance The firm believes that the safety of each employee is the responsibility of the individual as well as of the whole community of employees. Business Transformation-HR Transformation: To quote RIL CMD, Shri Mukesh D. Ambani, 'The Business Transformation initiative that we have embarked upon is singularly going to be			attrition. The Company also endeavours to meet the genuine expectations of the employees through various welfare measures. During the year, ONGC faced the destabilizing situation of agitation programmes by OSOA/ASTO over the issue of pay revision of Oil Sector Officers. The hard-line approach by the agitators culminated into strike during 7-9 January 2009 in almost all oil sector PSUs, causing serious disruption of operations in ONGC at all work centres. Post strike, strict measures have been taken to curtail disruptive activities.

		the most significant project that Reliance would have ever undertaken in its organisational history'. While this strategy cuts across Manufacturing, Businesses and Services, most of the transformation agenda is around and strongly interlinked with people practices and processes. The mandate is to build a world class HR organisation with benchmark processes and systems around Performance Management, Rewards and Recognition, Competency and Capability Building, Succession Planning, etc. amongst others. As an ongoing exercise, RIL has continued to look at, identify, create and			However, through direct communications, suitable measures have been taken to improve employee motivation. Except for this disruptive action by ASTO leadership, harmonious Industrial Relations were maintained all over the company.

		execute seamlessly, initiatives which enhance productivity and efficiency. Towards this end, the Company has put into place a central shared services organisation for HR, wherein Global Best Practices for HR Shared Services are integrated. The objective of this centre, apart from leveraging on the economies of scale, is to provide a world class experience to our people on all the matters that they have to deal with on a day-to-day basis including all transactions.			
	Training	Training, awareness and learning have been always at the forefront of RIL's journey to become world class in environmental performance. To meet this objective, RIL	Most new student hire complete 19 weeks of integrated on the job training. Infosys employs 610 full time employees as faculty including 208 with doctorate or masters	Human resource development in MMTC, therefore, is a continuous exercise compatible with the change in business patterns and technological	The Company has vast pool of skilled and talented professionals; the most valuable asset for the company. The Company

		focused on internal and advanced training programmes, inter-site meets, virtual classes, etc. involving subject experts; participation at national and international conferences, workshops and courses as well as networking/collaboration with universities, research institutes, regulatory bodies, industrial and professional associations, etc.	degree. Employees undergo certification programs each year to develop the relevant skills. Employee training facility is able to train 40,000 employees annually. During the year, the total days of training doubled to over two million person-days. The Infosys Global Education Center, a world-class training facility established at our campus in Mysore, India, is aimed at consolidating the learning requirements across the Company. With a total built-up area of 1.44 million square feet, the Infosys Global Education Center can accommodate the training needs of approximately 14,000 employees at a time. The training,	innovations in an era of diversification and search for new business opportunities. In MMTC the focus is on fashioning their HR policies towards providing more non-monetary incentives stemming from job satisfaction, diverse learning opportunities and wider exposure to ever-changing global business environment. 960 employees were imparted training during the year in different spheres of company's activities.	continued to extend several welfare benefits to its employees by way of comprehensive medical care, education, housing and social security. During the year 2008-09, the Company implemented 92 new and revised welfare policies for its employees. Fifty four employees were released under the Voluntary Retirement Scheme during the year. The Human Resource value of the employees based on "Lev and Schwartz" model is enclosed at Annexure 'B'. Several HRD initiatives were taken like HR Audit, Coaching & Mentoring, Business

			continuing education and career development programs are designed to ensure that the technology professionals and leaders in Infosys enhance their skill-sets in alignment with their respective roles. Most of the engineering graduates they hire complete an integrated on-the-job training module of about 20 to 29 weeks before they are assigned to a business unit.		Games, Advanced & Senior Management programmes for senior officers. During the year, ONGC Academy conducted 244 training programmes for 7,561 executives (130,252 training days). The Regional Training Institutes conducted training for 4,766 non-executives (16,594 mandays). "Interactive Interpretation Work Station" was installed and commissioning of all Hardware completed on 30-09-08 in Ankleshwar Asset. Training on System administration and Users' training on all software modules under Category-I

					completed.
Structural Capital					
	Number of new product introductions	A series of innovation-led programmes developed by RIL will make its way into the organisation. RIL, through its leadership and talent base is committed to institutionalising innovation in the organisation and will work relentlessly to achieve this ambitious vision. In a challenging year of demand destruction and the global financial crisis, RIL was resilient and continued to innovate to convert the adversity into an opportunity. RIL launched an innovative initiative called "Mission Kurukshetra"	BT Innovate and SETLabs the R&D divisions worked in collaboration using their respective intellectual properties to jointly develop and take to market a product called Real-time Business Intelligence Plus (RTBI Plus)		

		aimed at galvanising and energising the entire organization to rise to the occasion and help RIL emerge stronger. The focus of this initiative was on extreme efficiency, value maximisation to serve the new market conditions and safety and reliability of assets. The employees responded overwhelmingly by pouring in a record number of ideas over a specially built business excellence tool which operated on the Information Technology (IT) backbone. This initiative not only helped in surmounting the challenges with a will to win, but also identified serial ideators, who were recognised and			

		rewarded by the leadership of RIL. The Leading Expert Access Programme (LEAP) which gives access to global thought leaders continued to inspire the people of RIL. Nobel laureates, industry captains and thought leaders enthralled and enlightened communities with their experiences of life and work.			
	R& D expenditure as a percentage of administration	Expenditure on R & D: Rs. Crore a)Capital 187.48 b)Revenue 149.26 c) Total 336.74 d) Total R &D expenditure as a percentage of total turnover is 0.23%	R&D / Total Revenue – 1.24% Research grants – Rs. 23 Crores		New CDM projects
	Research and development	The Reliance Research and Technology Centre (RRTC) is set to be created with a floor space of more than half	Total R&D Capital Expenditure – 3 Crores R& D revenue expenditure – Rs. 435 Crores		Total R&D Expenditure as a percentage of Total Turnover 0.32% 0.30%

		a million square feet in the central district of Navi Mumbai. The RRTC will act as a hub for the research centers already operating at various manufacturing locations. Reliance intends to create world class physical and intellectual infrastructure in RRTC, with some of the best globally available scientists bolstering its innovation agenda.	R&D/Total Value Added – 1.41% During the year, the Education & Research unit published a compendium of white papers. ILI members have published original research papers and made several presentations at global conferences including the prestigious Society for Industrial / Organizational Psychology's 'Leading Edge' forum and Other annual conferences. The research topics included succession forecasting, virtual reality assessment, leadership due diligence and intangible asset valuation. During fiscal 2009, we had set up Infosys Science Foundation, a		

			not-for-profit trust to promote research in pure and applied sciences in India. The Infosys Prize endeavors to elevate the prestige of scientific research in India and inspire young Indians to choose a vocation in scientific research.		
	Technology	The Reliance Technology Group (RTG), created by consolidating various research and technology functions is helping create enhanced value delivery by leveraging all the skills and competencies, and creating new opportunities at the interfaces. RTG continues to get external perspectives from members of the Reliance Innovation Council (RIC).	Technology Investment / Revenue – 2.93% Technology Investment / Value Added – 3.33% on technology infrastructure.	To further improve its performance during 2009-10, a group of executives shall be improving upon its strategies/ business model for further diversification of its activities, tapping new markets/products while maintaining its focus on its core products/markets, entering into strategic affiance with producers of Non Ferrous Metals besides improving customer relationship	2008-09 2007-08 Capital 500.60 93.42 Recurring 1,574.44 1,753.32 Total 2,075.04 1,846.74

		Key objectives of RTG are as follows: Develop fit-for-purpose and sustainable technology and its application. Provide effective project support and assurance to manufacturing plants and businesses. Provide technical assurance to projects including technology selection and absorption. Proactively identify and support technical opportunities to add value across RIL's businesses. Develop technology strategies suited to create business growth and offset threats. Balance technology sourcing by a flexible strategy of smart buying, fast customisation and flagship development		management, unrelenting focus on Institutional clientele and deeper market access.	

		of key technologies. Exploit synergies cutting across technologies/disciplines. Improve technical productivity on a continuous basis. *Develop / recruit* staff with skills and motivation to meet current and future business needs. Create a fit-for-purpose process centric organisation. Ensure long term technical health of RIL businesses. Manage technology and Intellectual Property (IP) assets for the Company.			
	Internal Structure	The Company undergoes internal audit conducted by independent auditors.	Internal assets are systems, technologies, processes, methodologies and tools that are specific to the organization. Total Investment / Revenue 6.12	Project Development expenses provided in the BS. The Company's expenditure toward construction/development of assets on land owned by the Government/ Semi	Information Regarding Imported Technology: Information Regarding Imported Technology (Imported during the last five years from

			Total Investment / Value Added - 6.96 One of the first companies to develop and deploy a global delivery model and attain SEI-CMMI level 5 certification for both our offshore and onsite operations. Internal assets are systems, technologies, methodologies, processes, and tools that are specific to the organization. These assets give the organization a unique advantage over its competitors in the marketplace. These assets are not licensed to outsiders e.g., methodologies for assessing risk, managing projects, risk policies and communication systems.	Government Authorities, is capitalized under heading "Fixed Assets created on Land and neither the Fixed Assets nor the Land belongs to the Company".	the beginning of the Financial Year) published in Annual Report
	Capital expenses	Reliance's capital expenditure was Rs	Cap Ex – 1,177 Crores out of which 891	MMTC's progress in the recent past has	Internal Control Systems

		19,503 crore (US$ 4,861 million).	Crores was on physical infrastructure; 273 Crores was on technological infrastructure; 12 Crores on procurement of intangible assets and 1 Crore on vehicles Cap Ex / Total Revenue – 5.81%	taken it from monopoly status to a competitive open market player making a strong thrust towards broad basing its sphere of activities, while consolidating its core areas of business. To create synergy between its manufacturing, trading and technology partners and to bring optimum efficiency and expertise to its operations worldwide, MMTC has promoted along with government of Orissa, a million tonnes capacity Iron & Steel plant and a 0.8 million tonne capacity Coke Oven battery with by product recovery plant and a captive power plant of 55 MW capacity.	E&P operations need infallible control systems. The company has high standards and effective methods of monitoring its technology and field operations. Internal and external audits by internal groups and external bodies are conducted on regular basis to ensure that statutory safety and other government guidelines are being followed.

	Licences	Character of growth is diversifying from licensing to innovation.	Revenue from the sale of user licenses for software applications is recognized on transfer of the title in the user license, except in multiple arrangement contracts where revenue is recognized as per the proportionate completion method.	MMTC has a Systems & ERP Division comprising a highly professional team to cope with the highly competitive environment. MMTC's operational offices are all equipped with modern computing tools. ERP has been implemented. A user friendly intranet based Knowledge Management Solution has been made available to officials.	Net capital works-in-progress 116,964.57
	Franchise	RRL has recently opened its flagship store under its franchise agreement with Hamleys and plans to expand the store network in the coming year.			Four licenses for G&G modules (OpenWorks-2, SeisWorks-1 and StratWorks-1 of M/s Landmark Graphic Corporation).Three licenses for Reservoir Simulation (Model Builder-3 of M/s Computer Modeling Group Limited).

	Future interests	RIL has also aligned its sustainability activities with the focus areas of The World Business Council for Sustainable Development. Mode of growth is changing from organic to acquisitions. Nature of growth is expanding from manufacturing and services to agriculture and rural. And span of growth is rapidly extending from India to global.	Infosys is committed to focus on and collaborate with leading national and international universities, product vendors and technology start-up companies. Infosys is creating an ecosystem to co-create business solutions on client-specific business themes.		
	Culture	Reliance builds with care a workplace that proactively fosters professional as well as personal growth. There is freedom to explore and learn; and there are opportunities that inspire initiative and intrinsic motivation. We believe that people must dream to achieve, that these dreams will drive the company's	Strong unifying culture facilitates sharing of knowledge and best practices among employees. The culture and reputation as the leader in technology service industry enables the firm to recruit and retain the best talent in India The values that drive the company are: Customer Delight,	Internal Control Procedures In MMTC, day-to-day affairs are managed at various managerial levels in accordance with a well-defined "Delegation of Powers". Major issues are deliberated to arrive at conscious decisions by the respective Committees of	Standardized measure of Discounted Future Net Cash Flows relating to Proved Oil and Gas Reserve quantities as on 31st March, 2009. Future Plan of Action: ONGC has formed a joint venture with TERI called 'ONGC TERI Biotech Ltd.

		excellence in all its businesses. Reliance thinks, behaves, lives and thrives with a global mindset, encouraging every employee to reach his / her full potential by availing opportunities that arise across the group.	Leadership by example, Integrity and Transparency, Fairness, Pursuit of excellence. The lean organizational structure and strong unifying culture facilitate the sharing of knowledge and best practices among our employees.	Directors constituted by the Board of Directors as detailed in the report on Corporate Governance annexed herewith. MMTC has well-settled Internal Audit system & Procedures which is commensurate with its diverse functions. The company has an effectual Internal Audit Division, to coordinate with external auditing firms in conducting internal audit all through the year. The Internal Audit reports are considered by 'Senior Management Audit Committee' and 'Audit Committee of Directors'. The Audit Committee also meets the company's statutory auditors regularly to ascertain their concerns and observations on financial reports. The directions of the Audit	(OTBL)' incorporated on 26th March, 2007. Director (Onshore) has been nominated as the Chairman of this company. The company will address the requirement of Bioremediation, Microbial Enhance Oil Recovery and prevention of wax deposition in tubular during E&P operations. Some of the jobs undertaken by OTBL are as under: Contract was signed in November '08 between Mehsana Asset and OTBL for carrying out PDB jobs in 50 wells. As on 01.04.2009, the job has been carried out in 19 wells under the contract. PDB

				Committee are implemented by the Management in all cases.	jobs have significantly reduced need of scraping, HOC etc. and the wells are flowing without interruption. Ahmedabad Asset has signed a contract with OTBL to do MEOR job in 50 wells along with WDP job for 80 KM flow lines. In addition to this OTBL has been the first company to successfully show case the effectiveness of Oilzapper technology in cleaning oil spills in Kuwait. The company is hopeful of bagging a big contract in Kuwait and this will open up business opportunities for many other upstream

					and downstream activities in the Middle East.
	Strategy	It endeavors to achieve higher standards and provide oversight and guidance to management in strategy implementation and risk management and fulfillment of stated goals and objectives.	The strategy of Infosys is to increase their client base and thereby reduce risk of depending on a few large clients. Infosys has entered BSC Hall of Fame for executing strategy on the strength of their innovative strategy planning and execution capabilities.	For effective marketing of the finished products from above unit, as well as jewellery from other sources, the company is setting up, in partnership with a leading Indian company, a chain of retail stores at various cities in India for medallions, jewellery and its homegrown brand of 'SANCHI' silverware. Towards this end a special purpose vehicle (SPV) under the name and style of "MMTC-Gitanjali Private Limited" has been incorporated and to begin with one retail store each in Delhi, Gurgaon and Ahmedabad has already been opened	The management and employees of the Company are committed to uphold the core values of transparency, integrity, honesty and accountability.

				under the name "SHUDHI" by the said SPV.	
	Relational structure	Corporate Social Responsibility (CSR). Social welfare and community development is at the core of RIL's CSR philosophy and this continues to be a top priority for the Company. The CSR teams at the Company's manufacturing divisions interact with the neighbouring community on regular basis. RIL's contributions to the community are in areas of health, education, infrastructure development (drinking water, improving village infrastructure, construction of schools etc.), environment (effluent treatment,	The inclusion area concerns the affinity networks which help employees overcome differences, celebrate commonalities and create synergies based on the complementarities of talents. The influence area targets their managers who are engaged and involved in building diversity awareness and in suggesting support policies. The integration work aims at assessing diversity and at making it accountable through periodic surveys and reviews. Their D&I strategy wants to position Infosys as the employer of choice. Infosys not only has	Aiming at diversification and with a view to add value to its existing trading operations, the Company has undertaken various strategic initiatives following public-private partnership route to enhance the company's future sustainability.	Strategy meet The Company has a practice of periodic retreats where all members of the Board and senior officials of the Ministry of Petroleum & Natural Gas discuss issues of Corporate Strategy and Policy. The 7th Strategy Meet was held on 27-28 September, 2008 at Narendranagar.

		tree plantation, treatment of hazardous waste etc.), relief and assistance in the event of a natural disaster and contributions to other social development organizations. RIL also supports and partners with several NGOs in community development and health initiatives.	been sharing its diversity and inclusion experience with industry bodies, NGOs, and the Academia but has been communicating to the public its social impact through sustainability reports based on the GRI guidelines.		
	External validation	Reliance was recently rated by Boston Consulting Group as the fifth most sustainable value creator globally. Also that Reliance is the only Indian company in the list of top 25 companies in the World. This rating was based on tracking of performance over a ten-year period of companies with market capitalization of more than US$ 30 billion	ISEC has worked with WBCSD, GRI, NASSCOM, BEE, Indian Green Building Council etc towards development of sustainability initiatives.	In an IT driven culture, computer literacy is imparted to all employees.	The Company's website www.ongcindia.com contains separate dedicated section 'Investor Relations' where the shareholders information is available. Human Resource Development (HRD) has always been one of the constantly focused action point for the managment of

					the Company. The practices adopted under HRD concentrate on nurturing and developing talent for the core activities of the organization. Due to these endeavours, the Company has the finest pool of Scientists, Engineers and Professionals.
	Corporate Governanc e	Report on Corporate Governance in Annual Report.	Entire report is attached with the Annual Report.	To accelerate growth and enhance its future sustainability, MMTC is following Public Private Partnership route and has embarked upon various strategic initiatives which include, in broad terms, Setting up of a Commodity Exchange and a Currency Futures Exchange which are likely to commence operations shortly, Setting up a gold /silver medallion	Recognitions, Awards and Accreditations given in Appendix 4

				manufacturing unit, which would also include a gold refinery as an integral part and is likely to commence trial production in mid 2010, Setting up, in partnership with a leading Indian company, a chain of retail stores at various cities in India for medallions, jewellery and its homegrown brand of 'SANCHI' silverware and to begin with one retail store each in Delhi, Gurgaon and Ahmedabad has already been opened under the name "SHUDHI" , Setting up permanent berth with loading facilities for Iron ore at Ennore Port which likely to be operational by mid 2010, Development of deep draught Iron ore berth at Paradeep Port (Orissa), Promotion of	

				a joint venture Company with M/s TATA Steel Ltd. for exploration and development of mines for minerals, ferrous and non-ferrous ores, precious metals, diamonds and coal etc for which a MOU has been signed with M/s TATA Steel Ltd very recently. The company has stated that such strategic initiatives effectively integrate vertically both backward and forwards, encompass the entire gamut of the value chain having mines to markets.	

				Corporate Social Responsibility expenses – Rs 1.3 Million To accelerate growth and enhance its future sustainability, MMTC is following Public Private Partnership route and has embarked upon various strategic initiatives. Recently MMTC received "in-principle" approval from Forward Markets Commission, Deptt. of Consumer Affairs, Govt. of India, for setting up of a nationwide multi-commodity exchange jointly with M/s India Bulls Financial Services Ltd.	The Company believes in adopting the best practices in the areas of Corporate Governance. Corporate Governance is viewed as a value to be imbibed and an ideology to be ingrained into the corporate culture. Company's philosophy on corporate governance is led by strong emphasis on human values, individual dignity and adherence to honest, ethical and professional conduct.
Customer / External Capital					

	External structure	Reliance believes that a clean environment in and around the workplace fosters health and prosperity for the individual, the group and the larger community to which they belong. Environmental protection is an integral part of the planning, design, construction, operation and maintenance of all our projects.	External assets are market related intangibles that enhance the fitness of an organization for succeeding in the marketplace.	Top Indian Company in the Trading Sector by Dun & Bradstreet in their rankings "India's Top 500 companies 2008". In the same publication ranked 13th based on total income for the year 2007-08.	
	Customers	Its customers have benefited from high quality products delivered at the most competitive prices.	Customers are their key stakeholders. The firm added 170 customers in the year raising the total number of active customers to 538	The Company remains committed and dedicated to continuous development and adoption of the best corporate governance practices, which include honesty, trust and integrity, transparency, performance orientation, responsibility and accountability, mutual respect, and	Declared as the Greenest Indian company by the A C Nielsen - ORG MARG Survey, 2004, ONGC, is the only oil company in the SAARC region and the only public sector in India to have Carbon Credits on its balance sheet. Among its noteworthy initiatives, the prime

				commitment to the organization.	achievements of ONGC have been in reducing emissions, reducing effluent discharge, phasing out of Halon fire-suppression systems with environment-friendly systems, extensive mangrove plantation for shoreline protection, Ringal bamboo plantation in Upper Himalayas for sustaining Himalayan ecosystem, bio-remediation for sludge treatment at ONGC installations. To integrate Environment Sustainability in its business, ONGC has also been actively pursuing a number of Clean Development Mechanism (CDM) projects, alternate

					sustainable source of energy and Carbon Neutrality. All operational units of ONGC are certified with ISO 9001, 14001 and OHSAS-18001.
	Reputation of the company	The Company continues to have the highest domestic credit ratings of AAA from CRISIL and Fitch. Moody's and S&P have reaffirmed investment grade ratings for international debt of the Company, as Baa2 and BBB, respectively.	Brand Value – 32,345 Crores and Brand Value as a percentage of capitalization – 42.7%		Corporate Governance philosophy is based on the following principle of protection of the interest of all the stakeholders including employees, customers, vendors, shareholders and investors.
	Investor capital	Sustainable development directly drives value creation. It is an integral part of good process control, product/process innovation, avoidance of liability, and enhancement of an organization's intangible assets.	The firm communicates with investors regularly through e-mail, telephone and face-to-face meetings either in investor conferences, company visits or on road shows. The firm leverages the internet in communicating with	Its comprehensive infrastructure for bulk cargo handling, with well developed arrangements for rail and road transportation, warehousing, port and shipping, operations, gives MMTC complete control over trade logistics, both for	ONGC is spearheading the United Nations Global Compact - World's biggest corporate citizenship initiative to bring Industry, UN bodies, NGOs, Civil societies and corporate on the same platform.

		Put simply, the quality of sustainability management can help investors distinguish between companies that are efficient and well positioned to protect their market competitiveness and those that are headed for a bumpy ride. Certain specific factors can help drive a company's value; therefore, their disclosure should be of interest to investors. These factors include a range of different competencies and actions. For the investor, the numbers matter. Environmental performance indicators related to resource use and waste generation can support assessments of the cost savings and revenues that are available to, or	our investor base. The firm announces quarterly financial results within two weeks of the close of a quarter. After the announcement of the quarterly financial results, a business television channel in India telecasts a live discussion with their Management. This enables a large number of retail shareholders in India to understand their operations better. The announcement of quarterly results is followed by media briefings in several television channels, press conferences and earnings conference calls. The earnings calls are webcast live on the internet so that information is available to all at the same time. Further, transcripts of the earnings calls are	exports and imports. The company's countrywide domestic network is spread over 75 regional, sub-regional, port and field offices, warehouses and procurement centers.	During the year, the Company has undertaken various CSR projects at its work centers and corporate level.

		already realized by, a company that is being scrutinized by potential investors. The trend in performance should also give some indication of the overall ability of the company to manage these issues and capitalize on the opportunities they present. Environmentally driven innovation can create shareholder value by lowering costs, improving production processes and service delivery, and helping to find new markets. Increased process efficiency is an example of a proven sustainability strategy for decreasing costs and adding revenue, thereby improving profitability. Additional opportunities to cut	posted on their website, www.infosys.com, within a week. Highlights of the results are also made available to mobile phone users in India through SMS and WAP. They have also voluntarily furnished eXtensible Business Reporting Language (XBRL) data to the SEC and are participating in SEC's voluntary program for reporting financial information on EDGAR using XBRL and are one of the few companies in the world to adopt this standard.		

		costs and create revenues through increased yield and the sale of waste streams (e.g., scrap and by-products) exist throughout the business value chain, in areas such as product design, manufacturing processes, and use and disposal of materials. Environmentally driven innovation can offer significant benefits and enhance overall competitiveness. Over the longer term, process innovations can also lead to the creation of new products to meet emerging customer needs.			

	Stakeholder resources	In terms of distributing wealth to shareholders, apart from having a track record of uninterrupted dividend payout, the firm has also delivered a consistent unmatched shareholder returns since listing. What epitomizes the impact of all that we do is the fact that our shareholder base has grown from 52,000 after the IPO to around 3.6 million now.	The Infosys sustainability report covers GRI parameters that are most significant to business risks and opportunities and stakeholders. ISEC has been constituted to engage with external and internal stakeholders and understand their needs. They regard dialogue and engagement as vital in building a strong and lasting relationship with all our stakeholders.		ONGC owns and operates more than 22000 kilometers of pipelines in India, including nearly 4500 kilometers of sub-sea pipelines. No other company in India, operates even 50 per cent of this route length.
	Social and green responsibili ties	Report on CSR and triple bottom line performance along with details on all social initiatives undertaken by RIL. RIL is set to transform India's energy landscape from the oil & gas flowing from Dhirubhai 1 & 3 Natural gas - a low carbon, low polluting	The HSE policy reiterates the company's commitment towards environmental protection and management of health and safety of employees, contractors and visitors.	Top ranking in the list of India's top 100 wealth creation companies published by the Times Group and the Economic Times in their publication "ET500" released in Oct 2008. In the same publication MMTC has been ranked 17th amongst India's biggest	

		green fuel that will flow from oil fields will create value and be beneficial to a large section of India's society. RIL strives to have a better tomorrow with a cleaner and greener environment. In this regard, RIL launched specialty fibres that use post-consumer bottles and industrial waste for production of pre-coloured products. This segment predominantly caters to production of fibres for specialty defence uniforms. Apart from consuming used bottles, these fibres are also pre-coloured and do not need water for dyeing. RIL has a long and strong tradition of supporting the larger communities that it connects with – from		companies	

		education, health, drinking water, large-scale development of employable skills, to assistance during natural calamities such as earthquakes and cyclones.			

The brief result of the application of the framework on the cases is shown below:

Component of Intellectual Capital	Elements within each component of Intellectual Capital	Number of firms out of a total of 4 reporting on it
Human Capital		
	Training and development expenses per employee	4
	Benefits from training exercises	3
	Image of company from employees perspective	4
	IP assets	4
	Knowledge/Skill	3
	Innovation Capital	3
	Discovery	3
	Employees and Employee competence	3
	Human resources and Human resource practices	4
	Training	3
Structural Capital		
	Number of new product introductions	4
	R& D expenditure as a percentage of administration	4
	Research and development	4
	Technology	4
	Internal Structure	4
	Capital expenses	3
	Licences	3
	Franchise	**2**
	Future interests	4
	Culture	4
	Strategy	4
	Relational structure	4
	External validation	4
	Corporate Governance	4
External Capital		
	External structure	4
	Customers	3
	Reputation of the company	4
	Investor capital	4
	Stakeholder resources	4
	Social and green responsibilities	4

The framework is generic and can be adopted for Indian corporate because only one element of **Franchise** is not reported by two out of firms and this could be because of the type of business activity and organizational structure. Remaining elements are reported in some form of the other by the four firms.

The minimum disclosure however has been by MMTC which has not reported on 8 of the chosen elements and this could be because the firms is trading firm which is essentially a B2B activity. Infosys excels all the firms in the type and extent of disclosures as expected because it has created the maximum value from its intangibles and prefers to communicate this to all it stakeholders.

To improve the framework further a few elements that can be added to the framework to make it more apt for Indian reporting culture are as follows:

- **Corporate Social Responsibility**
- **Goodwill**
- **Human Resource Development**
- **Training and Development**
- **Welfare**
- **Research and Development**
- **Focus on Child Education**
- **Sustainability**
- **Awards**
- **Values, Mission, Vision**

5.4. Cases developed are as follows:

Case 1

Infosys Technologies Ltd

Introduction

Infosys Technologies Ltd. (NASDAQ: INFY) was started in 1981 by seven people with US$ 250. Today, the company is a global leader in the "next generation" of IT and consulting with revenues of US$ 5.4 billion (LTM Sep-10).

Infosys defines designs and delivers technology-enabled business solutions with a complete range of services by leveraging the company's domain and business expertise and strategic alliances with leading technology providers.

Industry - IT and ITES

The company's offerings span business and technology consulting, application services, systems integration, product engineering, custom software development, maintenance, re-engineering, independent testing and validation services, IT infrastructure services and business process outsourcing.

About the company

Infosys pioneered the Global Delivery Model (GDM), which emerged as a disruptive force in the industry leading to the rise of offshore outsourcing. The GDM is based on the principle of taking work to the location where the best talent is available, where it makes the best economic sense, with the least amount of acceptable risk.

Infosys has a global footprint with 63 offices and development centers in India, China, Australia, the Czech Republic, Poland, the UK, Canada and Japan. Infosys and its subsidiaries have 122,468 employees as on September 30, 2010.

Infosys takes pride in building strategic long-term client relationships. Over 97% of the company's revenues come from existing customers (FY 10).

Values

The values that drive the company are:

Customer Delight, Leadership by example, Integrity and Transparency, Fairness, Pursuit of excellence.

Infosys was one of the first few companies to develop and deploy a global delivery model and attain a SEI-CMM Level 5 certification.

Sustainability

As a corporate citizen with a conscience, Infosys strives to cultivate a sustainable approach to conducting business. In the company's interactions with stakeholders within and beyond the sphere of business, the company recognizes that the company shoulders a larger responsibility. The company does business with an open eye - continuously measuring and evaluating the consequences and impact of the company's actions.

Ingrained in the soul of Infosys is a drive to awaken in the company's employees, customers, investors and other stakeholders, as well as the larger society, a spirit of responsibility - to ourselves, the environment, the company's civic systems, the governments in the regions where the company work and contribute, and to the future of the generations to come.

External Capital

CSR

Infosys employees actively participate in the welfare of the local community. The company's Development Centers (DCs) in India make a difference through several Corporate Social Responsibility (CSR) initiatives.

The company's employees organize and contribute to welfare programs, especially for underprivileged children. The company supports the activities of institutes and Non-Government Organizations (NGOs) dedicated to healthcare and education, and campaigns for skills development and community welfare.

Environment protection

As a responsible corporate citizen, Infosys believes that the environment can be a participant and a beneficiary of progress. The company is reducing the company's carbon footprint even as the company expands its global presence.

Further, Infosys wishes to be recognized by all stakeholders, including customers, employees, vendors, share owners and community at large, as a company committed to high standards of environmental management and to providing its

employees, consultants and contractors with a safe and healthy environment, free of occupational injury and illness.

To achieve this, the company strives towards:

- Conservation of resources
- Prevention of pollution
- Adherence to all applicable legislations
- Eliminating accidents, occupational illnesses and injuries at work

The Health, Safety and Environmental Management System (HSEMS) at Infosys is called the 'Ozone Initiative'. It is the Infosys' endeavor to have and operate a HSEMS at various locations that will conform to the ISO 14001 standards and OHSAS 18001 requirements. Infosys has been certified compliant to OHSAS 18001 and re-certified compliant to ISO 14001 standards during May 2007, in eight of the company's development centers across India.

The company's 'Project Ozone' campaign spreads environmental awareness and implements eco-friendly practices across development centers worldwide. Further, this vision is supported by voluntary groups of employees organized into eco-clubs.

World-class healthcare is high on the agenda of the Infosys Foundation.

Emphasis on Education - offering a helping hand

In addition to the efforts of Infosys Foundation, the company's Education & Research group conducts the Infosys Extension Program (IEP), the Infosys Affirmative Action Program (IAAP), Infosys Fellowship Program, Rural Reach program, Catch Them Young and Train the Trainer.

External Alliances

Infosys' services and business solutions are strengthened by alliances with leading technology partners. The company's network of alliance and teaming relationships creates business value, reduces implementation risk and accelerates speed-to-market.

The company works with the company's partners to boost their revenue growth, expand market and geographic reach, facilitate sales process, and enhance product and service offerings.

Infosys and alliance partners jointly deliver business solutions that address the company's clients' business and technology problems. The company addresses specific client needs and develops tools and methods to accelerate the successful deployment of solutions while reducing risk.

Global Alliance Partners

The partnership focuses on developing solutions that incorporate Infosys IP and the alliance partners' technology and services. The company jointly deliver and market Infosys' solutions to clients across multiple industries and geographies.

- Microsoft
- Oracle
- SAP

Network of Networks

The partnership focuses on developing solutions that incorporate Infosys IP and the alliance partner's technology. The partner provides training, technical support and technology, enabling Infosys to sell and deliver solutions in a single industry or geography.

Teaming Partners

The partnership enables a hardware/software/services company, sales agent or a distributor who does not have an alliance with Infosys to partner with us and propose and deliver a solution for a specific customer initiative.

Strategic Partnerships with Global Growth Companies

As part of Infosys' strong partnership with the World Economic Forum and its various activities, Infosys is also a proud partner of the Global Growth Companies, an emerging group of leading multinational companies from around the world.

The Global Growth Companies hosted its first annual meeting in Dalian, China, from September 6 - 8, 2007.

Brand Value - Methodology for calculation of brand value is as follows:

Determine brand profits by eliminating non brand profits from total profits, restate the historical profits at present day values, provide for remuneration of capital to be used for purposes other than promotion of the brand, adjust for taxes and then determine the brand strength or brand earnings multiple.

Brand strength multiple is a function of a multitude of factors such as leadership, stability, market, internationality, trend, support and protection. Inflation is assumed at 8.4%p.a.; 5% of average capital employed is used for purposes other than promotion of brand and the tax rate is at 33.99%. The earnings multiple is based on ranking against industry average based on certain parameters.

Total Brand value – 32,345 Crores

Market Capitalization – 75,837 Crores

Brand value / Mkt Cap – 42.7%

Brand Value / revenue – 1.49

EVA – 55.9 Crores

Economic Value Added is the surplus generated after discounting the cost of capital employed. It is the post tax returns on capital employed less the cost of capital employed.

Structural Capital

Research and Development

Infosys Prize for pushing the frontiers of research

The Infosys Science Foundation recognizes outstanding scientific research contributing to the growth and development of India. The winners of Infosys Prize 2010 include researchers who are addressing the conflict between environment and development, and researching a vaccine for malaria.

The Infosys Prize is an annual prize instituted by the Infosys Science Foundation to honor outstanding inventions or discovery across five categories. It carries a cash award of 50 lakh, a citation certificate and a gold medallion. A jury of eminent leaders in the five fields evaluates the body of research of the nominees every year.

The Infosys Science Foundation is a not-for-profit trust established by Infosys Technologies Ltd. in February 2009 to promote research in sciences in India.

Enterprise Risk Management (ERM)

The Enterprise Risk Management (ERM) at Infosys encompasses practices relating to identification, assessment, monitoring and mitigation of various risks to our business. ERM at Infosys seeks to minimize adverse impact on its business

objectives and enhance stakeholder value. Further, risk management practices seek to sustain and enhance long-term competitive advantage of the Company. Risk management is integral to the business model, described as 'Predictable, Sustainable, Profitable and De-risked' (PSPD) model. The core values and ethics provide the platform for its risk management practices.

Corporate Governance

Corporate governance is about maximizing shareholder value legally, ethically and on a sustainable basis, while ensuring fairness to every stakeholder - the company's customers, employees, investors, vendor-partners, the governments of the countries in which the company operate, and the community. Thus, corporate governance is a reflection of the company's culture, policies, the company's relationship with stakeholders and the company's commitment to values.

The company believes that sound corporate governance is critical to enhance and retain investor trust.

The company's Board exercises its fiduciary responsibilities in the widest sense of the term. The company's disclosures always seek to attain the best practices in international corporate governance. The company also endeavors to enhance long-term shareholder value and respect minority rights in all the company's business decisions.

The company continues to be a pioneer in benchmarking the company's corporate governance policies with the best in the world. The company's efforts are widely recognized by investors in India and abroad. The company has undergone the corporate governance audit by ICRA and CRISIL. ICRA has rated the company's corporate governance practices at CGR 1. CRISIL has assigned CRISIL GVC Level 1 rating to us.

The company has complied with the recommendations of the Narayana Murthy Committee on Corporate Governance constituted by the Securities and Exchange Board of India (SEBI).

Corporate governance report

CRISIL has been consistently assigning the firm 'CRISIL GVC Level 1' rating over several years now. This Governance and Value Creation (GVC) rating

indicates the company's capability to create wealth for all the company's stakeholders while adopting sound corporate governance practices.

ICRA has assigned 'CGR 1' rating to the company's corporate governance practices.

In 2008-09 the company provided 1,383,146 days of training at foundation level

A complete report on all initiatives towards corporate social responsibility and sustainability. It includes all endeavors towards stakeholders, building cutting edge solutions, fostering talent for a sustainable future, striving for a better tomorrow and achieving towards a sustainable environment. The GRI reporting has been rated as of level A+.

A formal 5 page document specifying the code of conduct has been prepared.

Corporate Governance Philosophy

- The company's corporate governance philosophy is based on the following principles:
- Satisfy the spirit of the law and not just the letter of the law
- Corporate governance standards should go beyond the law
- Be transparent and maintain a high degree of disclosure levels
- When in doubt, disclose
- Make a clear distinction between personal conveniences and corporate resources
- Communicate externally, in a truthful manner, about how the Company is run internally
- Comply with the laws in all the countries in which the Company operates
- Have a simple and transparent corporate structure driven solely by business needs
- Management is the trustee of the shareholders' capital and not the owner

Board composition

At the core of the company's corporate governance practice is the Board, which oversees how the management serves and protects the long-term interests of all the company's stakeholders. The company believes that an active, well-informed and independent Board is necessary to ensure the highest standards of corporate governance. The majority of the Board, eight out of 15, are independent members.

Further, the company has audit, compensation, investor grievance, nominations and risk management committees, which comprise independent directors.

As a part of the company's commitment to follow global best practices, the company complies with the Euro shareholders Corporate Governance Guidelines 2000, and the recommendations of the Conference Board Commission on Public Trusts and Private Enterprises in the U.S. The company also adheres to the UN Global Compact Program.

Corporate Governance

The primary purpose of corporate leadership is to create wealth legally and ethically. This translates to bringing a high level of satisfaction to five constituencies - customers, employees, investors, vendors and the society-at-large. The raison d'être of every corporate body is to ensure predictability, sustainability and profitability of revenues year after year.

- **N. R. Narayana Murthy**

Chairman of the Board and Chief Mentor

All Awards

2010

Infosys is ranked among the top ten value-creating technology and telecommunications companies by The Boston Consulting Group

- Telstra and Infosys won Best ITSM (IT Service Management) Project of the Year, the top industry award bestowed by itSMF Australia, the peak body for ITSM in Australia
- Infosys BPO was recognized for outsourced services delivery at the Shared Services & Outsourcing Network (SSON) 2010 North American and Australasian Shared Services Excellence Awards.
- Infosys was voted the best company in management, corporate governance, investor relations, and corporate social responsibility (India) in a Finance Asia magazine survey
- Infosys ranked second in The International Association of Outsourcing Professionals 'Global Outsourcing 100'
- Infosys BPO wins the "Most Dynamically Developing BPO Center in Poland" award from Forbes Magazine

- Infosys ranked among 'Best Companies for Leaders'
- Infosys ranked among the best in investor relations in APAC region
- Infosys wins award for the 'Best investor relations by an APAC company in the US market'
- Infosys BPO wins "BPO Organization of the Year" and "Fun at Work" awards from Stars of the Industry
- Infosys has been voted in The Asset Triple A Corporate Awards - Gold Award for Investor Relations in Technology in USA
- Infosys, the most sought-after company in India: Business Today Survey
- Infosys wins American Society for Training & Development (ASTD) award for excellence in inclusivity

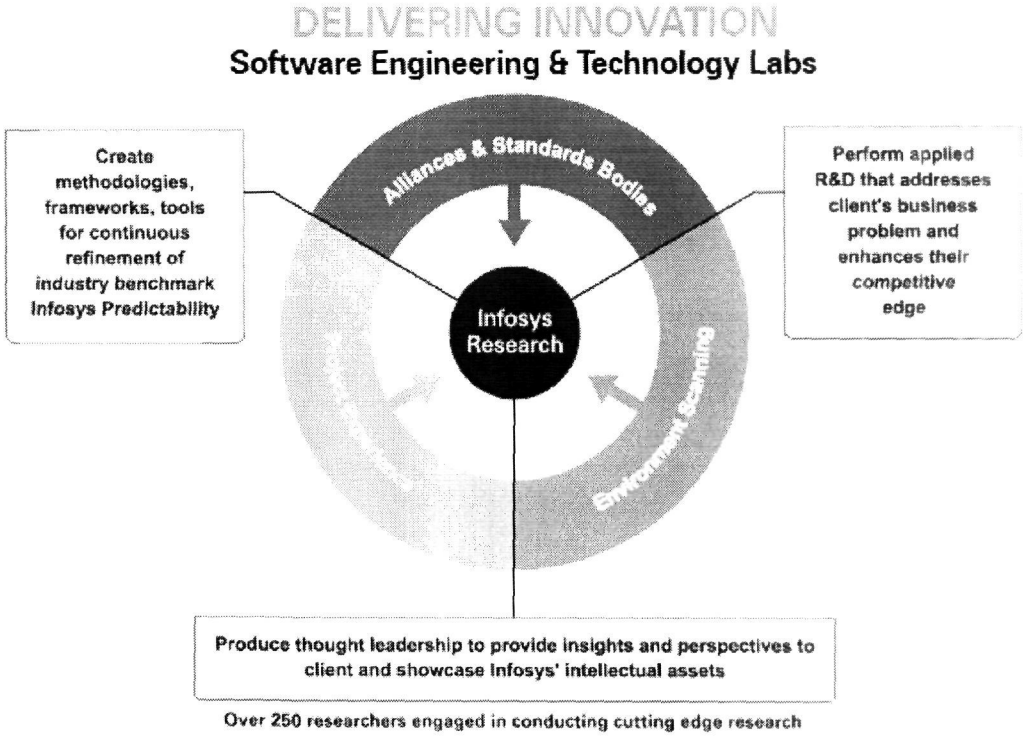
2009

- Independent Research Firm Names Infosys as a Leader Among Oracle Service Providers
- Infosys among Asia's Most Admired Knowledge Enterprises
- Infosys Honored with Oracle Titan Partner Award at Oracle® OpenWorld 2009
- Infosys' Siebel Business Process Testing Solution Named "Partner Solution Offering of the Year" at HP Software Universe 2009
- Infosys Named as a Top Supplier for Sears Holdings Corporation
- Independent Research Firm Names Infosys as a Leader in SAP Implementation
- Infosys BPO Bags Excellence Award for Diversity Hiring Initiatives
- Infosys BPO Receives e-SCM-SP Capability Level 5 Certificate from Carnegie Mellon University's ITSqc
- Infosys Cited as a Leader in North American SOA Systems Integration Services Market by Independent Research Firm
- Infosys BPO receives "positive" rating in leading analyst firm's Comprehensive Finance and Accounting Business Process Outsourcing MarketScope report
- Infosys listed on Forbes' Asian Fabulous 50 for the fourth consecutive year
- Infosys ranked among the greenest brands in India

- Infosys in 'India's Best Companies to Work For' : Survey by Great Place to
- Work® Institute
- Infosys in Fortune's 100 fastest-growing companies
- Infosys, the most admired Indian company: Wall Street Journal survey
- Infosys, the Best Outsourcing Partner: Waters Rankings 2009
- Infosys has received the highest rating on corporate governance by ICRA
- Infosys was ranked among the top 50 most respected companies in the world by Reputation Institute's Global Reputation Pulse 2009
- Infosys listed among best companies for leaders by Hay Group and Chief Executive Magazine
- Infosys received the distinction of having one of the 'Best Ranked Online Annual Reports in Greater China & Asia/Pacific' at IR Global Rankings 2009

Research

Software Engineering & Technology Labs (SETLabs) is the research arm of Infosys. The company is at the forefront of anticipating and shaping the evolution of technology and its impact on business.



The company delivers innovation through:

Targeted Research

Infosys SETLabs undertakes research in the areas of Malleable Architecture, Pervasive Access, Flexible Processes and Personalized Information.

Centers of Excellence

The company's Centers of Excellence (CoE) focus on extending technology competence in convergence, data warehouse and business intelligence, grid computing, J2EE, Microsoft and SOA.

Global Internships

InStep, Infosys' internship program, enables undergraduate, graduate and PhD students to work on live technical and business projects.

Engagements

Infosys SETLabs engages clients through workshops, research projects, joint publications and deployment opportunities.

Innovation Co-creation

Innovation and Leadership

Technological Innovations have been discussed in the SetLabs Briefings published regularly. One of the first companies to develop and deploy a global delivery model and attain SEI-CMMI level 5 certification for both offshore and onsite operations.

An economical, agile, smooth way to Co-creation: Infosys BACNet (iBAC) Gateway

Infosys BACNet (iBAC) Gateway is a product that enables seamless integration of Infosys Wireless Sensor Network products with BACNet compatible products. BACNet is a widely deployed standard for Building Management System (BMS) and there is a large deployed base of BMS systems based on it.

The Innovation Co-creation program at Infosys

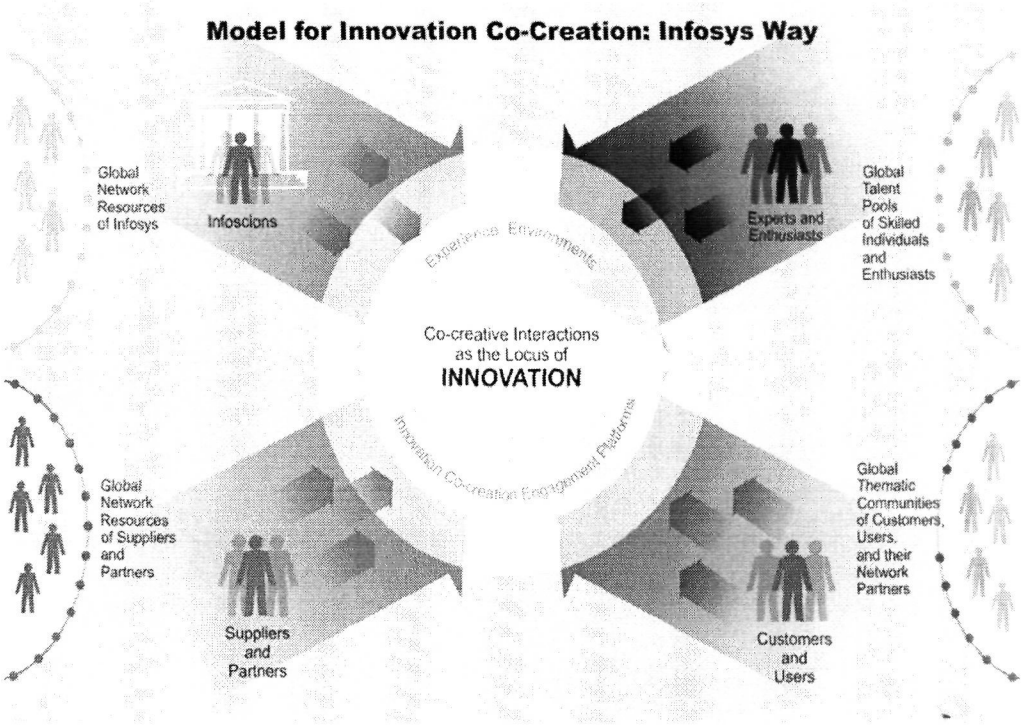
Infosys' SETLabs, as part of its research and innovation capability, incubated the Innovation Lab in collaboration with Prof. Venkat Ramaswamy in 2005. Since then, the idea of co-creation has been disseminated across Infosys and to many of the company's clients.

The Infosys Innovation Lab has built several capabilities to enable the practice of Innovation Co-creation by enterprises through joint research, joint innovation

centers, joint Intellectual Property (IP) licensing, joint product development and early adaptor programs.

A Perspective

Software Engineering and Technology Labs (SETLabs), Infosys' R&D arm, came up with the concept of Innovation Co-creation. Innovation Co-creation has been practiced across the company's units and with some of the company's clients for joint development of products, solutions and IP.



Infosys ranked second in 'Global Outsourcing 100'

Infosys was ranked second in The International Association of Outsourcing Professionals® (IAOP®) '2010 Global Outsourcing 100®'. Infosys was recognized for 'demonstrated competencies' in Information and Communication Technology (ICT) services and Transaction Processing services.

Balance Sheet Items

Revenue expenditure: Rs. 437 Crores

Capital expenditure: Rs. 3 Crores

Total: Rs 440 Crores

R&D expenditure / total revenue: 2.1%

As on 31 Mar, 2010: IP: Rs. 12 Crore – Amortized: 12 Crore

Intangible assets are recorded at the consideration paid for acquisition of such assets and are carried at cost less accumulated amortization and impairment. Goodwill comprises the excess of purchase consideration over the fair value of the net assets of the acquired enterprise. Goodwill arising on consolidation or acquisition is not amortized but is tested for impairment. Intangible assets are amortized over their respective individual estimated useful lives on a straight-line basis, commencing from the date the asset is available to the Group for its use.

Research costs are expensed as incurred. Software product development costs are expensed as incurred unless technical and commercial feasibility of the project is demonstrated, future economic benefits are probable, the Company has an intention and ability to complete and use or sell the software and that these costs can be measured reliably.

Intangible Asset Score sheet as published by the company itself

A knowledge intensive company leverages know-how, innovation and reputation to achieve success in the marketplace. Hence, these attributes should be measured and improved upon year after year to ensure continual success. Managing a knowledge organization necessitates a focus on the critical issues of organizational adaptation, survival and competence in the face of ever-increasing discontinuous environmental change. The profitability of a knowledge firm depends on its ability to leverage it's learn ability of its professionals and to enhance the reusability of their knowledge and expertise. The intangible assets of a company include its brand, ability to attract, develop and nurture a cadre of competent professionals and its ability to attract and retain marquee clients.

As per the company's annual report, the intangible assets can be classified into four major categories: **human resources, intellectual property assets, internal assets and external assets**.

Human resources represent the collective expertise, innovation, leadership, entrepreneurship and managerial skills of the employees of the organization.

Intellectual Property assets include know-how, copyrights, patents, products and tools that are specific to an organization. These assets give the organization a unique advantage over its competitors.

Internal assets are systems, technologies, methodologies, processes, and tools that are specific to the organization. These assets give the organization a unique advantage over its competitors in the marketplace. These assets are not licensed to outsiders e.g., methodologies for assessing risk, managing projects, risk policies and communication systems.

External assets are market related intangibles that enhance the fitness of an organization for succeeding in the marketplace.

To reduce the information asymmetry a few disclosures are made by the company. They include Brand Valuation, Balance Sheet including Intangible assets, Economic Value Added statement, Intangible asset scorecard, Risk Management Report, Human Resource Accounting, and Value Added Statement. These reports are integral to the Annual Report.

Human Capital

Diversity

A global company's employee base should reflect the diversity of the world it serves. Infosys thus strives to employ people representing the widest possible variety of nationalities, cultures, genders and gender identities, employment histories, and levels of physical ability. In doing so, the company is able to recruit new employees from all available global talent pools and provide paths to employment to all members of world societies, including talented individuals from groups who may have in the past been underrepresented within the IT industry. Within such a diverse company, people bring to the workplace contrasting opinions and worldviews. As these people interact, they develop new ideas, methods, and perspectives. Infosys recognizes and promotes this power of diversity to drive innovation.

Infosys actively fosters inclusivity across all of its business units and in every one of its company offices. It encourages all employees to focus on the commonalities they share and leverage their differences towards productive teamwork.

Inclusivity ultimately makes for a more informed and sensitive employee base that is better able to serve clients.

Infosys was the first Indian IT company to establish a company office to manage and drive all company initiatives dealing with diversity and inclusion. Today the company has employees from over 70 countries. Women constitute more than 32% of the company's workforce.

Infosys Women Inclusivity Network (IWIN) promotes a gender-sensitive work environment and recognizes the unique aspirations and needs of women. It provides avenues for vocational, personal and psychological counsel to enable professional and personal development. The company's new Family Matters Network provides support to employees on parenting matters. On International Women's Day 2009, Infosys honored women employees who have been catalysts of social change. Infosys also launched Spark Guru, an initiative to awareness among school teachers in rural areas about social issues.

Infosys actively seeks to hire and train persons with disabilities. In 2006 and 2007, Infosys BPO received the Helen Keller award for the best employer from the National Centre for Promotion of Employment for Disabled People (NCPEDP).

Infosys Leadership Institute

The Infosys Leadership Institute is the hub of Infosys' talent development program. The Institute trains new recruits and grooms the next generation of leaders. At Infosys, you are always learning, irrespective of your age or work experience.

Human Resources valuation

The company has used the Lev and Schwartz model for human valuation. The evaluation is based on the present value of future earnings of employees and on the following assumptions:

Employee compensation includes all direct and indirect benefits earned both in India and abroad.

The incremental earnings based on group / age have been considered

The future earnings have been discounted at the rate of cost of capital 12.18% (previous year- 13.32%)

Total Income: 21693 Crore

Total employee cost: 11405 Crore

Value added: 19,073 Crore

Net profit excluding exceptional items: 5,988Crore

Total Human Asset Value – 1, 02,133 Crores

Ratios related to Human Resource value:

Value of human resources per employee – 0.97

Total Income/Total Human resources value – 0.21

Employee cost / Human resources value – 11.2%

Value added / Human resources value – 0.19

Return on human resources value -5.9%

Value added statement

Value added from operations: 18,600 Crores

Other income including exceptional items – 473 Crores

Total Value added – 19,073 Crores

Distribution of value added –

Salaries and bonuses – 11,405 Crores

Dividend – 1,345 Crores

Taxes – 1,147 Crores

Retained in business – 4,415 Crores

Young Global Leaders

Infosys is a proud partner of the Forum of Young Global Leaders, a newly formed, unique, multi-stakeholder community of 1,111 exceptional young leaders who share a commitment to shaping the global future. The Forum brings together young leaders who are currently internationally prominent and those who are destined for future greatness.

Each year, the World Economic Forum identifies 200-300 exceptional individuals, drawn from every region in the world and many disciplines and sectors. Together, they form a powerful international community which can dramatically impact the global future.

Developing Capabilities

Infosys conducted a survey with the help of EIU titles Mind the Gaps. This study was aimed at identifying the latest trends in business scenarios and the perspectives of the executives on the impact of these trends and the responses towards them.

The report mentions that "Infosys brings together expertise in consulting, IT services and BPO to create solutions that allow its clients to make money from information, to increase customer loyalty through faster innovation, to restructure their cost base so that cost becomes fuel for growth and helps them win in turns of business cycles."

The report also mentions that there are two critical points about the ability of the companies to compete over the next three years. First is the ability to overcome employee resistance to change. Second is the need for commitment from senior management to change organizational structures and processes in order to compete and succeed in the changing global economy.

Social Entrepreneurship through InfYi

InfYi, the Infosys Young Indians Chapter, is the first-ever corporate chapter of Young Indians (Yi), an integral part of the Confederation of Indian Industry (CII). InfYi strives to transform India through high-impact social change by enabling and promoting a spirit of value-driven social entrepreneurship.

Coming to the constituents of Intellectual Capital adopted for the study, the three types of capital that are explored are Human, Structural Capital and Customer / Relational Capital.

Framework applied to Infosys Ltd

Human Capital		
1.	Training and development expenses per employee	Recruitment and training Rs 6 Crores in 2009 and Rs 2 Crores in 2010. Billed Training expenses – Rs 92,081 Crores Each director is entitled for a training fee of US $5,000 per

		annum
2.	Benefits from training exercises	Value added per employee - 0.19 Crores Value added per software professional - 0.20 Crores
3.	Image of company from employees perspective	Ranked as 14th most respected company in the world by reputation institute. The firm's reputation as a premier employer enables them to select from a large pool of qualified applicants. In Fiscal 2009, they received approx. 4, 88,700 applications and added 12,400 new employees net of attrition excluding the BPO.
4.	IP assets	IPRs worth Rs. 12 Crores Intellectual Property assets include know-how, copyrights, patents, products and tools that are specific to an organization. These assets give the organization a unique advantage over its competitors.
5.	Knowledge/Skill	The Project Management Centre of Excellence helps employees enhance project management competencies and have trained over 2934 managers and more than 28120 employees were awarded technical certifications this fiscal year. The Enterprise solutions Academy has trained 29667 employees since its inception and Infosys Leadership Institute offered nearly 3, 43,000 person days of learning last year.
6.	Innovation Capital	Innovation Lab focusing on leveraging Information Communication and Technology to innovate and co-create with our clients. SETLabs has invested R&D efforts to show its commitment to sustainable innovation The ACM-Infosys Foundation Award jointly with the Association of Computing Machinery for the recognition of young scientists and system developers whose contemporary innovations have an

		impact on the computing field.
7.	Discovery	Business results Impact @ Infosys Technologies BrITe uniquely blends IT specific Six Sigma approach with statistical predictive modeling to address diverse business critical parameters to provide breakthrough improvements.
8.	Employees and Employee competence	Total employees 1,04,850, Staff education index – 2,72,644, Value added per employee 0.2 Crore , Attrition 11.1%
9.	Human resources and Human resource practices	The Infosys Leadership Institute is the hub of Infosys' talent development program. During the year, we implemented the Infosys Role and Career Enhancement (iRACE) program. iRACE aligns talent management activities with client priorities, business needs and employee aspirations. Human resources represent the collective expertise, innovation, leadership, entrepreneurship and managerial skills of the employees of the organization.
10.	Training	Most new student hire complete 19 weeks of integrated on the job training. Infosys employs 610 full time employees as faculty including 208 with doctorate or masters degree. Employees undergo certification programs each year to develop the relevant skills. Employee training facility is able to train 40,000 employees annually. During the year, the total days of training doubled to over two million person-days. The Infosys Global Education Center, a world-class training facility established at our campus in Mysore, India, is aimed at consolidating the learning requirements across the Company.

		With a total built-up area of 1.44 million square feet, the Infosys Global Education Center can accommodate the training needs of approximately 14,000 employees at a time. The training, continuing education and career development programs are designed to ensure that the technology professionals and leaders in Infosys enhance their skill-sets in alignment with their respective roles. Most of the engineering graduates they hire complete an integrated on-the-job training module of about 20 to 29 weeks before they are assigned to a business unit.
Structural Capital		
1.	Number of new product introductions	BT Innovate and SETLabs the R&D divisions worked in collaboration using their respective intellectual properties to jointly develop and take to market a product called Real-time Business Intelligence Plus (RTBI Plus)
2.	R& D expenditure as a percentage of administration	R&D / Total Revenue – 1.24% Research grants – Rs. 23 Crores
3.	Research and development	Total R&D Capital Expenditure – 3 Crores R& D revenue expenditure – Rs. 435 Crores R&D/Total Value Added – 1.41% During the year, the Education & Research unit published a compendium of white papers. ILI members have published original research papers and made several presentations at global conferences including the prestigious Society for Industrial / Organizational Psychology's 'Leading Edge' forum and Other annual conferences. The research topics included succession forecasting, virtual

		reality assessment, leadership due diligence and intangible asset valuation. During fiscal 2009, we had set up Infosys Science Foundation, a not-for-profit trust to promote research in pure and applied sciences in India. The Infosys Prize endeavors to elevate the prestige of scientific research in India and inspire young Indians to choose a vocation in scientific research.
4.	Technology	Technology Investment / Revenue – 2.93% Technology Investment / Value Added – 3.33% on technology infrastructure.
5.	Internal Structure	Internal assets are systems, technologies, processes, methodologies and tools that are specific to the organization. Total Investment / Revenue – 6.12 Total Investment / Value Added - 6.96 One of the first companies to develop and deploy a global delivery model and attain SEI-CMMI level 5 certification for both our offshore and onsite operations. Internal assets are systems, technologies, methodologies, processes, and tools that are specific to the organization. These assets give the organization a unique advantage over its competitors in the marketplace. These assets are not licensed to outsiders e.g., methodologies for assessing risk, managing projects, risk policies and communication systems.
6.	Capital expenses	Cap Ex – 1,177 Crores out of which 891 Crores was on physical infrastructure; 273 Crores was on technological infrastructure; 12 Crores on procurement of

		intangible assets and 1 Crore on vehicles Cap Ex / Total Revenue – 5.81%
7.	Licenses	Revenue from the sale of user licenses for software applications is recognized on transfer of the title in the user license, except in multiple arrangement contracts where revenue is recognized as per the proportionate completion method.
8.	Franchise	
9.	Future interests	Infosys is committed to focus on and collaborate with leading national and international universities, product vendors and technology start-up companies. Infosys is creating an ecosystem to co-create business solutions on client-specific business themes.
10.	Culture	Strong unifying culture facilitates sharing of knowledge and best practices among employees. The culture and reputation as the leader in technology service industry enables the firm to recruit and retain the best talent in India The values that drive the company are: Customer Delight, Leadership by example, Integrity and Transparency, Fairness, Pursuit of excellence. The lean organizational structure and strong unifying culture facilitate the sharing of knowledge and best practices among our employees.
11.	Strategy	The strategy of Infosys is to increase their client base and thereby reduce risk of depending on a few large clients. Infosys has entered BSC Hall of Fame for executing strategy on the strength of their innovative strategy planning and execution capabilities.

12.	Relational structure	The inclusion area concerns the affinity networks which help employees overcome differences, celebrate commonalities and create synergies based on the complementarities of talents. The influence area targets their managers who are engaged and involved in building diversity awareness and in suggesting support policies. The integration work aims at assessing diversity and at making it accountable through periodic surveys and reviews. Their D&I strategy wants to position Infosys as the employer of choice. Infosys not only has been sharing its diversity and inclusion experience with industry bodies, NGOs, and the Academia but has been communicating to the public its social impact through sustainability reports based on the GRI guidelines.
13.	External validation	ISEC has worked with WBCSD, GRI, NASSCOM, BEE, Indian Green Building Council etc towards development of sustainability initiatives.
14.	Corporate Governance	Entire report is attached with the Annual Report.
External Capital		
1.	External structure	External assets are market related intangibles that enhance the fitness of an organization for succeeding in the marketplace.
2.	Customers	Customers are their key stakeholders. The firm added 170 customers in the year raising the total number of active customers to 538
3.	Reputation of the company	Brand Value – 32,345 Crores and Brand Value as a percentage of capitalization – 42.7%
4.	Investor capital	The firm communicates with investors regularly through e-mail, telephone and face-to-face

		meetings either in investor conferences, company visits or on road shows. The firm leverages the internet in communicating with our investor base. The firm announces quarterly financial results within two weeks of the close of a quarter. After the announcement of the quarterly financial results, a business television channel in India telecasts a live discussion with their Management. This enables a large number of retail shareholders in India to understand their operations better. The announcement of quarterly results is followed by media briefings in several television channels, press conferences and earnings conference calls. The earnings calls are webcast live on the internet so that information is available to all at the same time. Further, transcripts of the earnings calls are posted on their website, www.infosys.com, within a week. Highlights of the results are also made available to mobile phone users in India through SMS and WAP. They have also voluntarily furnished eXtensible Business Reporting Language (XBRL) data to the SEC and are participating in SEC's voluntary program for reporting financial information on EDGAR using XBRL and are one of the few companies in the world to adopt this standard.
5.	Stakeholder resources	The Infosys sustainability report covers GRI parameters that are most significant to business risks and opportunities and stakeholders. ISEC has been constituted to engage with external and internal stakeholders and understand their needs. They

		regard dialogue and engagement as vital in building a strong and lasting relationship with all our stakeholders.
6.	Social and green responsibilities	The HSE policy reiterates the company's commitment towards environmental protection and management of health and safety of employees, contractors and visitors.

Case 2

MMTC

Introduction

MMTC is engaged in trading, export and import of minerals, fertilizers, metals, and agricultural products. The company has trading activities across Asia, Europe, Africa, Oceania and the Americas. The company operates through following businesses: minerals, precious metals, fertilizers, metals, agro products, coal, hydrocarbon, and general trading. MMTC is one the largest exporters of minerals in India. The company trades iron ore, manganese ore, chrome ore, and others minerals such as mud chemicals, barytes, bentonite, bauxite, talc, gypsum, feldspar, quartz, silica sand, garnet sand, kaolin (china clay), and vermiculite.

The company provides logistic support through a network of regional and port offices in India, as well as international subsidiary, MMTC Transnational Private Limited (MTPL), Singapore. MMTC exports iron ore to Japan, South Korea, China, and the Middle East.

Industry – Trade

In precious metals, MMTC is engaged in a range of activities such as imports, exports and domestic retail trade of metals, precious metals, fertilizers, industrial raw materials, and agro products.

About the Company

Established in 1963, MMTC, one of the two highest foreign exchange earners for India, is a leading international trading company with a turnover of over US$ 7 billion. It is the largest international trading company of India and the first Public Sector Enterprise to be accorded the status of "FIVE STAR EXPORT HOUSE" by Govt of India for long standing contribution to exports.

MMTC is the largest non-oil importer in India. As the largest trading company of India and a major trading company of Asia, MMTC aims at improving its position further by achieving sustainable and viable growth rate through excellence in all

its activities, generating optimum profits through total satisfaction of shareholders, customers, suppliers, employees and society.

Mission

To be a leading International Trading House in India operating in the competitive global trading environment, with focus on bulk as core competency and to improve returns on capital employed.

To render high quality of service to all categories of customers with professionalism and efficiency.

External Capital

Corporate social responsibility

The Company since its inception in 1963 has been sensitive to its social responsibilities and has been discharging its responsibilities whenever there have been any natural calamity like earthquake, cyclone, Tsunami, drought, flood etc. The Company has adopted Corporate Social Responsibility as Corporate Policy for which funds to the extent of 1% of the retainable earnings of the previous year are earmarked. The main focus of the company's CSR policy is to provide relief and restoration at the time of national calamities, promotion of literacy, organize health check up camps and community activities preferably in the neighboring areas of MMTC's operations particularly in backward areas.

During the year 2008-09, the Company spent over Rs.5 million on various CSR projects which included contribution of Rs. 2.50 million to the Chief Minister relief Fund, Govt of Orissa it was badly affected by fury of floods.

Social and welfare activities

In annual balance sheet – goodwill on consolidation has been as application of funds

In annual P&L statement – goodwill has been written off as an expense.

Goodwill is amortized over a period of five years.

The differences between the cost of investment in the associates and the share of net assets at the time of acquisition of shares in the associates are identified in the financial statements as Goodwill or Capital Reserve as the case may be.

MMTC's social and welfare activities promote welfare of the employees through various schemes like sports activities, liberal loan facilities like house building advance, conveyance loan, house hold loan, marriage advance, etc. MMTC also provides subsidized canteen facilities, medical treatment, and residential accommodation in some of the major cities for its employees. MMTC also takes care of employees' families through merit scholarship, tuition fee reimbursement, etc.

MMTC is committed towards environmental upkeepment through aforestation in the mining areas, development of tribal areas and infrastructure development through rail links, port facilities, etc.

Corporate governance

Corporate governance is an area of major significance for all those who are affected by organizations directly or indirectly, whether as investors, directors, employees, suppliers, customers or the community in general. The Company remains committed and dedicated to continuous development and adoption of the best corporate governance practices, which include honesty, trust and integrity, transparency, performance orientation, responsibility and accountability, mutual respect, and commitment to the organization.

Corporate governance in MMTC

MMTC is continuously dedicated in promoting the principles of sound corporate governance norms through the development and adoption of highest standards of transparency, trust and integrity, performance orientation, responsibility and accountability, professionalism, social responsiveness, ethical business practices and commitment to the organization as a self discipline code for sustainable enrichment of stakeholders' value.

Human Capital

Industrial relations & human resource management

Cordial and harmonious industrial relations continued to prevail in the company with no man-days being lost during the year. Regular meetings were held with the Unions / Associations at local level and Federation / Association at the Apex level

under Joint Consultative Machinery / Structured Scheme of Meetings for arriving at amicable resolution of personnel issues with a view to achieve Company's goals and objectives.

The aggregate manpower of the company as on 31st March 09 stood at 1882, including six Board level executives, the balance comprising of 613 Officers, 1167 staff & 96 workers. This manpower strength includes 24 officers, 137 staff & 96 workers of erstwhile Mica Trading Company Ltd., which had been merged with the company pursuant to the orders of BIFR. While the composite representation of the total manpower consisted of women employees representing 18.27% (344 employees) of the total manpower, the representation of SC, ST, OBC & persons with disabilities (PWD) was to the extent of 21.25% (400 employees), 7.27% (137 employees), 1.06% (20 employees) and 1.64% (31 employees) respectively. During the year 45 officers, including 5 from SC & and 4 from OBC categories were inducted through campus recruitment. Presidential Directives on reservations for SCs, STs, OBCs and PWD in services were followed fully in recruitment and promotion. In an effort for rightsizing the manpower, Voluntary Retirement Scheme was offered which was availed by 9 officers, 32 staff cadre employees and 28 workers.

Aiming towards further enhancing / upgrading the skills of employees in the constantly changing business scenario 960 employees were imparted training during the year in different spheres of company's activities. This was done through programmes organized both with in-house expertise as well as external resources from renowned institutions / organizations. The employees deputed for training included 150 employees belonging to SC, 66 to ST and 229 women employees. In terms of man-days such training works out to 2428 training man days during the year 2008-09.

HRD mantra in MMTC

In MMTC the focus is on fashioning its HR policies towards providing more non-monetary incentives stemming from job satisfaction, diverse learning opportunities and wider exposure to ever-changing global business environment.

MMTC Ltd., which is a global trading organization and one of Asia's leading trading companies, has been the first corporate in the public sector to realize the vital role which online trading has come to occupy in today's global business.

HR mantra in MMTC is to provide more and more job enrichment opportunities to all so as to ensure that employees remain motivated to realize their full potential for organizational goals and self-development. Opportunities are also provided to all to enrich their knowledge base and technical skills through in-house training programmes and through trainings/seminars organized by reputed outside agencies. Human resource development in MMTC, therefore, is a continuous exercise compatible with the change in business patterns and technological innovations in an era of diversification and search for new business opportunities. Notwithstanding the culture of a public sector organization, we in MMTC realize that our most important asset is the employee. We design our HR policies to meet the above objective. Following are some of the HR policies followed in MMTC.

Training and Development

In an IT driven culture, computer literacy is imparted to all employees

i. Non-graduate employees are encouraged through various incentive schemes to become graduates. Likewise, post-graduate qualifications are encouraged through incentives for promotion to higher levels.
ii. Graduate employees are encouraged to obtain professional qualifications through corporate sponsorships.
iii. Through job rotation employees are constantly motivated to acquire knowledge and operational skills in different areas of company's operations. This exercise obviously prepares employees for managing higher positions more competently.
iv. As an incentive to better performers, merit based promotions are considered.
v. Regular training programmes for upgrading employee skills, knowledge and attitudes, in areas like IT, ERP, e-commerce, international trading

practices, general management techniques etc. Are organized in an effort to keep employee morale and commitment high.

vi. Specialization is encouraged in higher management positions through specialized management development programmes arranged within India and outside India. LME training, hedging in metals, global bullion pricing, third country trading, offshore trading, and counter-trade mechanism are some of such specialized trainings.

vii. General management training programmes for all categories of managers are periodically organized through reputed institutions like IIM, ASCI, IIFT, and MDI etc.

viii. Periodical training programmes are also organized for the development of SC /ST/OBC employees and women employees.

In short, corporate philosophy at MMTC towards HR is to ensure continuous development of human resource for fast changing global business through individual freedom and flexibility.

Structural Capital

Code of conduct

Pursuant to Clause 49 (I) (D) of the Listing Agreement signed with Stock Exchanges, a detailed Code of Conduct for Board Members and Senior Management Personnel has been laid down and hosted on the website of the company. All Board Members and Senior Management Personnel (except one) on the regular rolls of the company as on 31st March 2009, to whom the said Code is applicable, have affirmed compliance of the same for the period ended 31st March 2009.

Broadbased activities beyond trading

MMTC's progress in the recent past has taken it from monopoly status to a competitive open market player making a strong thrust towards broad basing its sphere of activities, while consolidating its core areas of business.

To create synergy between its manufacturing, trading and technology partners and to bring optimum efficiency and expertise to its operations worldwide, MMTC has

promoted along with government of Orissa, a million tonnes capacity Iron & Steel plant and a 0.8 million tonne capacity Coke Oven battery with by product recovery plant and a captive power plant of 55 MW capacity.

Support services

MMTC lays emphasis on human resources development and related activities. Several training programmes are conducted to upgrade managerial skills in the latest developments in trade management, export marketing, general management.

Computerization

MMTC has a Systems & ERP Division comprising a highly professional team to cope with the highly competitive environment. MMTC's operational offices are all equipped with modern computing tools. ERP has been implemented. A user friendly intranet based Knowledge Management Solution has been made available to officials.

Vigilance

To enhance the goodwill & confidence emanating from value based business practices; the Vigilance group of the company carried further its focus on system improvement and preventive vigilance. An annual calendar of vigilance inspections was prepared by the group well in advance to ensure systematic and regular vigilance inspections. During the year regular inspections were conducted by vigilance & non-vigilance officers and based on the feedback received, corrective/ preventive measures were suggested. Special emphasis was also laid on updation of trade related drills/ manuals, streamlining of tendering and other procedures in line with the guidelines issued by Central Vigilance Commission.

During the year under report Vigilance group of the Company was also instrumental in organizing "Vigilance Awareness Week" in various offices of MMTC in November 2008 whereat stress was laid upon increasing vigilance awareness amongst employees and business associates, to bring enhanced transparency in public dealings.

Future Projects/ Joint Ventures

Aiming at diversification and with a view to add value to its existing trading operations, the Company has undertaken various strategic initiatives following public- private partnership route. These strategic initiatives to enhance the company's future sustainability include:

(I) Setting up of a Commodity Exchange under the name and style of "International Multi Commodity Exchange Limited" which is likely to commence operations in the fourth quarter of 2009.

(II) Setting up of a Currency Futures Exchange under the name and style of "United Stock Exchange of India Ltd" which is also likely to commence operations in the fourth quarter of 2009.

(III) Joining hands with an international producer as a joint venture partner for setting up a gold /silver medallion manufacturing unit, which would also include a gold refinery as an integral part, under the name and style of "MMTC-Pamp India Private Limited". The civil construction activities for the said unit have already commenced in Haryana and the unit is likely to commence trial production in the second quarter of 2010.

(IV) For effective marketing of the finished products from above unit, as well as jewellery from other sources, the company is be setting up, in partnership with a leading Indian company, a chain of retail stores at various cities in India for medallions, jewellery and its homegrown brand of 'SANCHI' silverware. Towards this end a special purpose vehicle (SPV) under the name and style of "MMTC-Gitanjali Private Limited" has been incorporated and to begin with one retail store each in Delhi and Ahmedabad have already been opened under the name "SHUDHI" by the said SPV.

(V) Setting up permanent berth with loading facilities for Iron ore at Ennore Port jointly with SICAL and L&T Infrastructure Ltd. Under the name and style of M/s. SICAL Iron Ore Terminals Limited, Chennai. The permanent berth being constructed by M/s. SICAL Iron Ore Terminals Limited is likely to be operational in first quarter of 2010.

(VI) Development of deep drought Iron ore berth at Paradeep Port (Orissa) jointly with Noble Group Ltd and Gammon Infrastructure Projects Ltd under the name and style of M/s. Blue Water Iron Ore Terminal Private Ltd.

(VII) Towards investing in mining infrastructure the Company shall be promoting a joint venture Company with M/s TATA Steel Ltd. For exploration and development of mines for minerals, ferrous and non-ferrous ores, precious metals, diamonds and coal etc.

(VIII) As reported earlier, to facilitate promotion of two-way trade, the company is setting up of free trade and warehousing zones at Haldia and Kandla on lines similar to Special Economic Zones.

(IX) The Company has been allotted a coal mine in Jharkhand having estimated reserves of about 700 million MT, pre-feasibility study of which has already commenced and prospecting license is likely to be issued shortly by the concerned authorities.

Awards & rankings

Following Awards and Rankings were bagged by the Company during 2008-09:

1. Gold Trophy for being top Exporter for the Year 2006-07 in Merchant Exporter category by EEPC;
2. CAPEXIL highest award for highest export in Minerals and Ores sector for the year 2007-08, (17th time in a row);
3. Niryat Shree Bronze Trophy for the year 2005-06 presented by the Hon'ble President of India, in January 2009 in the Highest Foreign Exchange Earner category by Federation of Indian Exporters Organisation (FIEO).
4. Top Indian Company in the Trading Sector by Dun & Bradstreet in their rankings "India's Top 500 companies 2008". In the same publication ranked 13th based on total income for the year 2007-08
5. Ranked as the Highest Wealth Creator PSU by Dalal Street Journal
6. Top ranking in the list of India's top 100 wealth creation companies published by the Times Group and the Economic Times in their publication "ET500" released in Oct 2008. In the same publication MMTC has been ranked 17th amongst India's biggest companies

7. Ranked 4th amongst India's most valuable Public Sector Companies by "Business Today" in its publication "BT500" released in November 2008. In the same publication, ranked at 6th place amongst 10 most valuable companies.
8. Ranked 12th in the list of India's Top PSUs 2009 released by Dun & Bradstreet.

Framework applied to MMTC Ltd

Human Capital		
	Training and development expenses per employee	The employees deputed for training included 150 employees belonging to SC, 66 to ST and 229 women employees. In terms of man-days such training works out to 2428 training man days during the year 2008-09. Training and development expenses Rs 5.76 million
	Benefits from training exercises	NO INFORMATION
	Image of company from employees perspective	Cordial and harmonious industrial relations continued to prevail in your company with no man-days being lost during the year.
	HR practice	MMTC has stated that they realize that their most important asset is the employee. They have designed our HR policies to meet the above objective
	IP assets	NO INFORMATION
	Knowledge/Skill	A user friendly intranet based Knowledge Management Solution has been made available to officials.
	Innovation Capital	NO INFORMATION
	Discovery	NO INFORMATION
	Employee competence	NO INFORMATION
	Human resources	Human resource development in MMTC, therefore, is a continuous exercise compatible with the change in business patterns and technological innovations in an era

		of diversification and search for new business opportunities.
	Human resource practices	In MMTC the focus is on fashioning their HR policies towards providing more non-monetary incentives stemming from job satisfaction, diverse learning opportunities and wider exposure to ever-changing global business environment.
	Employees	NO INFORMATION
	Training	960 employees were imparted training during the year in different spheres of company's activities.
Structural Capital		
	Number of new product introductions	To further improve its performance during 2009-10, a group of executives shall be improving upon its strategies/ business model for further diversification of its activities, tapping new markets/products while maintaining its focus on its core products/markets, entering into strategic affiance with producers of Non Ferrous Metals besides improving customer relationship management, unrelenting focus on Institutional clientele and deeper market access.
	R& D expenditure as a percentage of administration	Project Development expenses provided in the BS. The Company's expenditure toward construction/development of assets on land owned by the Government/ Semi Government Authorities, is capitalized under heading "Fixed Assets created on Land and neither the Fixed Assets nor the Land belongs to the Company".
	Research and development	MMTC's progress in the recent past has taken it from monopoly status to a competitive open market player making a strong thrust towards broad basing its sphere of activities, while consolidating its core areas of business. To create synergy between

		its manufacturing, trading and technology partners and to bring optimum efficiency and expertise to its operations worldwide, MMTC has promoted along with government of Orissa, a million tonnes capacity Iron & Steel plant and a 0.8 million tonne capacity Coke Oven battery with by product recovery plant and a captive power plant of 55 MW capacity.
	Technology	MMTC has a Systems & ERP Division comprising a highly professional team to cope with the highly competitive environment. MMTC's operational offices are all equipped with modern computing tools. ERP has been implemented. A user friendly intranet based Knowledge Management Solution has been made available to officials.
	Internal Structure	Internal Control Procedures- In MMTC, day-to-day affairs are managed at various managerial levels in accordance with a well-defined "Delegation of Powers". Major issues are deliberated to arrive at conscious decisions by the respective Committees of Directors constituted by the Board of Directors as detailed in the report on Corporate Governance annexed herewith. MMTC has well-settled Internal Audit system & Procedures which is commensurate with its diverse functions. The company has an effectual Internal Audit Division, to coordinate with external auditing firms in conducting internal audit all through the year. The Internal Audit reports are considered by 'Senior Management Audit Committee' and 'Audit Committee of Directors'. The Audit Committee also meets the company's statutory auditors regularly to ascertain their concerns

		and observations on financial reports. The directions of the Audit Committee are implemented by the Management in all cases.
	Capital expenses	NO INFORMATION
	Licenses	NO INFORMATION
	Franchise	For effective marketing of the finished products from above unit, as well as jewellery from other sources, the company is setting up, in partnership with a leading Indian company, a chain of retail stores at various cities in India for medallions, jewellery and its homegrown brand of 'SANCHI' silverware. Towards this end a special purpose vehicle (SPV) under the name and style of "MMTC-Gitanjali Private Limited" has been incorporated and to begin with one retail store each in Delhi, Gurgaon and Ahmedabad has already been opened under the name "SHUDHI" by the said SPV.
	Future interests	Aiming at diversification and with a view to add value to its existing trading operations, the Company has undertaken various strategic initiatives following public- private partnership route to enhance the company's future sustainability.
	Culture	In an IT driven culture, computer literacy is imparted to all employees.
	Strategy	To accelerate growth and enhance its future sustainability, MMTC is following Public Private Partnership route and has embarked upon various strategic initiatives which include, in broad terms, Setting up of a Commodity Exchange and a Currency Futures Exchange which are likely to commence operations shortly, Setting up a gold /silver medallion manufacturing unit, which would also include a gold refinery as an integral part and is likely to commence trial production in mid 2010, Setting up, in partnership with

		a leading Indian company, a chain of retail stores at various cities in India for medallions, jewellery and its homegrown brand of 'SANCHI' silverware and to begin with one retail store each in Delhi, Gurgaon and Ahmedabad has already been opened under the name "SHUDHI" , Setting up permanent berth with loading facilities for Iron ore at Ennore Port which likely to be operational by mid 2010, Development of deep draught Iron ore berth at Paradeep Port (Orissa), Promotion of a joint venture Company with M/s TATA Steel Ltd. for exploration and development of mines for minerals, ferrous and non-ferrous ores, precious metals, diamonds and coal etc for which a MOU has been signed with M/s TATA Steel Ltd very recently. The company has stated that such strategic initiatives effectively integrate vertically.both backward and forwards,to encompass the entire gamut of the value chain having mines to markets.
	Relational structure	Corporate Social Responsibility expenses – Rs 1.3 Million To accelerate growth and enhance its future sustainability, MMTC is following Public Private Partnership route and has embarked upon various strategic initiatives. Recently MMTC received "in-principle" approval from Forward Markets Commission, Deptt. of Consumer Affairs, Govt. of India, for setting up of a nationwide multi-commodity exchange jointly with M/s India Bulls Financial Services Ltd.
	External validation	Top Indian Company in the Trading Sector by Dun & Bradstreet in their rankings "India's Top 500 companies 2008". In the same

		publication ranked 13th based on total income for the year 2007-08.
	Corporate Governance	The Company remains committed and dedicated to continuous development and adoption of the best corporate governance practices, which include honesty, trust and integrity, transparency, performance orientation, responsibility and accountability, mutual respect, and commitment to the organization.
External Capital		
	External structure	Its comprehensive infrastructure for bulk cargo handling, with well developed arrangements for rail and road transportation, warehousing, port and shipping, operations, gives MMTC complete control over trade logistics, both for exports and imports. The company's countrywide domestic network is spread over 75 regional, sub-regional, port and field offices, warehouses and procurement centers.
	Customers	NO INFORMATION
	Reputation of the company	Top ranking in the list of India's top 100 wealth creation companies published by the Times Group and the Economic Times in their publication "ET500" released in Oct 2008. In the same publication MMTC has been ranked 17th amongst India's biggest companies
	Investor capital	An interim dividend @ 40% on the Paid-up Capital was declared by Board of Directors and paid to the shareholders in March 2009. The Board of Directors recommend the declaration of final dividend of 80% which would include interim dividend @ 40% already paid on the equity capital of the Company for the year 2008-09.
	Stakeholder resources	NO INFORMATION

	Social and green responsibilities	MMTC is committed towards environmental upkeep through forestation in the mining areas, development of tribal areas and infrastructure development through rail links, port facilities, etc.

Case 3

ONGC Ltd

Introduction

Today, ONGC is the flagship company of India; and making this possible is a dedicated team of nearly 33,000 professionals who toil round the clock. It is this toil which amply reflects in the aspirations and performance figures of ONGC. The company has adopted progressive policies in scientific planning, acquisition, utilization, training and motivation of the team. At ONGC, everybody matters, every soul counts.

ONGC has a unique distinction of being a company with in-house service capabilities in all the activity areas of exploration and production of oil & gas and related oil-field services.

Industry :Refineries

The basis of the selection of the company is its highest market capitalization in India. This is because it has been established that high market capitalization is influenced by intangibles possessed and disclosed by the company. The data given below has been extracted from information available on the company's website. The website was chosen as the database purposely so as to assess the extent of disclosures made by the company for general public. Again because this is the information which influences the perception of the common investor towards the company which in turn governs its market capitalization.

Needless to emphasize, this was made possible by the men & women behind the machine. Over 18,000 technically-competent experienced scientists and engineers, mostly from distinguished Universities / Institutions of India and abroad form the core of our executive profile. They include geologists, geophysicists, geochemists, drilling engineers, reservoir engineers, petroleum engineers, production engineers, engineering & technical service providers, financial and human resource experts and IT professionals.

About the company

Oil and Natural Gas Corporation Ltd. (ONGC) is an Indian State Enterprise and integrated Oil & Gas Group with interests in E&P, Refining, LNG, Power, Petrochemicals and new sources of energy. It has been reliable energy solution provider for the country for more than five decades now. Driven by its strategic target to double its In-place Oil & Oil-Equivalent-Gas (O+OEG) reserves from 6 to 12 billion tonnes and improve recovery factor from 28% to 40% by 2020, ONGC – with over 32,000 people - is aggressively pursuing energy aspirations of India.

ONGC is ranked 402nd in Fortune-500 list 2009 by turnover. ONGC is the first and only Indian company to have figured in Fortune's 'World's Most Admired Companies' List in 2007. It is recognized as no. 3 top E&P Company in the world and ranks 26th amongst leading global Energy majors as per 'Platts Top 250' Global Energy Company Ranking 2009. PFC Energy 50 ranked ONGC at 23rd amongst Global Oil & Gas Companies by Market Capitalization and ranked 4th leading Global E&P Company.

ONGC is placed 152 in Forbes Global 2000 listing for year 2009(this is up 46 notches above last year's rank of 198th). Forbes composite score is based on the ranking for sales, profits, assets and market value, which makes it realistic and admired.

Vision and Mission

To be a world-class Oil and Gas Company integrated in energy business with dominant Indian leadership and global presence.

- Dedicated to excellence by leveraging competitive advantages in R&D and technology with involved people.
- Imbibe high standards of business ethics and organizational values. Abiding commitment to safety, health and environment to enrich quality of community life.
- Foster a culture of trust, openness and mutual concern to make working a stimulating and challenging experience for our people.

- Strive for customer delight through quality products and services.

Biggest Wealth-Creator for Stakeholders

The People of India (through Government of India) built ONGC with Rs. 342.8 Crore, contributed over 2 years from 1959 to 1981. ONGC has paid back so far:

(a) Contribution to Exchequer: Rs. 2,33,486 Crore (Rs. 1,87,813 Crore to Central exchequer, Rs. 45,673 Crore to State exchequers)

(b) Dividend (cumulative): Rs. 46,212 Crore till FY2009 (GoI: Rs. 36,360 Crore + Other shareholders Rs. 9,852 Crore

(c) Government of India realized Rs. 14,380 Crore through progressive Disinvestment in 2004.

Performance

- During FY'09, ONGC registered highest-ever Sales Income (Turnover) of Rs. 63,949 Crore (up 6% from Rs. 60,137 Crore in FY'08). The Compounded Annual Growth Rate (CAGR) in Turnover in last 5 years is 14.49 %.
- It earned net Profit of Rs. 16,126 Crore despite providing for highest-ever subsidy discount of Rs.28,225 Crore (up 28% from Rs. 22,001 Crore in FY'08) as per the directives of the GoI. The Compounded Annual Growth Rate (CAGR) in Net Profit in last 5 years is 13.23%.
- ONGC continues to be a zero debt Company.

Market Share

- ONGC has 2.139 billion shares in market with around 400,000 shareholders - which include more than 450 Foreign Institutional Investors (FIIs). ONGC continues to be amongst top three highest market capitalization companies in the country.
- ONGC is the only company with positive MVA and EVA, as brought out by the Business Today – Stern Stewart study. The BSE Sensex, the most popular barometer of stock market mood in the country, has been restructured with ONGC finding a place in the Sensex for the first time.

ONGC Group company, MRPL entered the BSE Top 30 for the first time in its existence. The combined share of ONGC and MRPL represents almost 12% of the market cap on the BSE.

Value added production rose 2% to 866 thousand tonne.

Net worth = Share capital +Reserves – Intangible assets

Integrated In Energy Business

- Focus on domestic and international oil and gas exploration and production business opportunities.
- Provide value linkages in other sectors of energy business.
- Create growth opportunities and maximize shareholder value.

Strategic Vision: 2001-2020

- To focus on core business of E&P, ONGC has set strategic objectives of:
- Doubling reserves (i.e. accreting 6 billion tonnes of O+OEG).
- Improving average recovery from 28 per cent to 40 per cent.
- Tie-up 20 MMTPA of equity Hydrocarbon from abroad.
- The focus of management will be to monetize the assets as well as to assetise the money.

Competitive Strength

- All crudes are sweet and most (76%) are light, with sulphur percentage ranging from 0.02-0.10, API gravity range 26°-46° and hence attract a premium in the market.
- Strong intellectual property base, information, knowledge, skills and experience
- Maximum number of Exploration Licenses, including competitive NELP rounds.
- ONGC has bagged 120 of the 238 Blocks awarded in the 8 rounds of bidding, under the New Exploration Licensing Policy (NELP) of the Indian Government. ONGC has begged 17 out of 31 blocks awarded in NELP round VIII(14 as operator).

- ONGC owns and operates more than 22000 kilometers of pipelines in India, including nearly 4500 kilometers of sub-sea pipelines. No other company in India, operates even 50 per cent of this route length.

Financials (2009-10)

- ONGC posted a net profit of Rs. 167.68 billion despite volatile oil markets and crude prices.
- Net worth Rs. 864 billion
- Practically Zero Debt Corporate
- Contributed over Rs. 281 billion to the exchequer

Global Ranking

- ONGC ranks 3rd Oil & Gas Exploration & Production (E&P) Company in the world and 23rd among leading global energy majors as per Platts 250 Global Energy Companies List for the year 2009
- ONGC ranks 24th among the Global publicly-listed Energy companies as per 'PFC Energy 50" (Jan 2008)
- Finance Asia 100 list ranks ONGC no 1 among Indian Blue Chips.
- Occupies 155th rank in the "Forbes Global 2000" list for 2010, to be among the world's biggest companies for 2010 based on sales, profits, assets and market capitalization.

ONGC ranked 402nd position as per Fortune Global 500 - 2009 list; based on revenues, profits, assets and shareholder's equity.

Value system of ONGC

Respect and **dignity** are the key values that underline the relationship ONGC has with its human assets. Conscious about its responsibility to society ONGC has evolved guidelines for Socio-Economic Development programmes in areas around its operations all over the country including Education, Health Care and Family Welfare, Community Development, Promotion of Sports and Culture, Calamity Relief , Development of Infrastructural Facilities, Development of the Socially & Economically Weaker Sections of Society Benefit and Welfare

Relational Capital

Energy conservation:

Energy Conservation measures taken: ONOC conducts Energy Audits of its oil installations every year.

* B-173A fluid diversion to dedicated separator, ODU flash drum gas diversion & Gas Lift recycling was completed on 30-11-2008 at a cost of Rs.2.6 Crore helping in reduction flaring at Neelam by about 25000M3/day.

* MINAS Plant at Uran is running on Gravity flow through 18' line thereby stopping all dewatering pumps of Surge Pond as a result there is a minimum power saving of Rs. 20 Lakh per annum.

* In Hazira plant, one Stage Blanking i.e. reduction of one Impeller in one Lean Amine Charge Pump of GSU-I was carried out. The Technical Intervention has reduced the Operating Cost of Pump without compromising process requirement. The project has been included in the CDAA Project Phase - II and process for its registration is on.

* In Hazira Plant, The Zero Gas Flaring project was registered by United Nations Framework Convention for Climate Change (UNFCCC) as CDM project on 16th May 2008.

* Creating energy conservation awareness and efficient use of energy by celebrating OGCF-09 at all the locations of ONGC and carried out different activities like cycle rally, LPG Quiz programme, quiz, drawing, slogan, essay competition, Drivers awareness programmes, workshop on energy conservation, exhibition, free pollution check up, street play etc.

* Created awareness as part of energy conservation by providing training on Energy conservation techniques to 12389 employees of ONGC at Delhi, Dehradun, Agartalla, Rajahmundry, Chennai, Karaikal, Bokaro, Kolkatta, Uran, Ahmedabad, Ankleshwar, Mehsana, Jodhpur, Sibsagar/ Nazira. It is expected that by imparting this training they can bring down the energy bills by 20%.

* New energy efficient light sources like CFL, sodium lights, T-5 Tube lights etc are fitted in place of inefficient lights at Dehradun & in Assets.

* The employees & their families are educated on 'Energy Conservation techniques' under the campaign of 'URJA UDAI'.

* Bi-Fuel kit installed in Generators in CBM Bokaro to save diesel.

* VFDs are installed at desalter plant, Ahmedabad to save the electrical energy.

* Energy in-efficient Engines D-399 & D-398 on different drilling rigs are replaced by energy efficient 3512 B Cat Engine 38 Nos & K-50 Cummins Diesel engines 31 Nos.

In addition, the following measures have also been taken:

Commitment to environment:

The Company is equally conscious and shares the global concern on climate change. You may be pleased to know that the company is the only PSU to have four of its CDM projects registered with the United Nations Framework Convention on Climate Change (UNFCCC). Two more validated projects are awaiting registration at UNFCCC. ONGC is also playing a pioneering role in the field of Greenhouse Gas (GHG) accounting which will help the Company to benchmark its operations leading to energy efficiency.

Corporate Social Responsibility (CSR):

The Company, a responsible Corporate Citizen, has also enhanced its commitment towards Corporate Social Responsibility (CSR). It has resolved to earmark 2% of the net profit (compared to 0.75% earlier) for the various CSR projects which will be looked after by a dedicated group at the corporate level. A dedicated group, headed by a senior officer of the rank of Group General Manager, has been constituted to pursue CSR activities.

ONGC is spearheading the United Nations Global Compact - World's biggest corporate citizenship initiative to bring Industry, UN bodies, NGOs, Civil societies and corporate on the same platform.

During the year, the Company has undertaken various CSR projects at its work centres and corporate level. CSR policy integrated with Business strategies

Concern for Climate:

ONGC is equally conscious and shares the global concern on climate and it has remained on top of agenda of the management. The Company is also playing a pioneering role in the field of Greenhouse Gas (GHG) accounting. This is the first step towards carbon foot printing and full fledged carbon disclosure system and the first step for attaining carbon neutrality. GHG accounting will also help ONGC in benchmarking its operations leading to energy efficiency.

Health, Safety & Environment (HSE)

The company has implemented globally recognized QHSE management systems conforming to requirements of ISO 9001, OHSAS 18001 and ISO 14001 at ONGC facilities and certified by reputed certification agencies at all its operational units. Surveillance Audits for Sustaining HSE accreditation was carried out in 408 units during the year. In addition to this, 248 HSE (Process Safety) Audits were carried out during the year. The Company also carried out Safety Management Perception Survey for the offshore operations through globally reputed consultant M/s DuPont.

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Women Empowerment

Women employees constitute about 5% of ONGC's workforce. Various programmes for empowerment and development, including programme on gender sensitization are organized regularly.

Community Development

ONGC is playing an important role in strengthening the fabric of society. This flagship Company in India's corporate world has a finely tuned sense of moral responsibility towards the community of people where it operates and the country at large.

Local population is the one which is benefited most as a result of the ONGC operations in the region. It generates employment & business opportunities, which in turn improves the overall economy of the region and the living standards of the community. ONGC operations provide the necessary boost required for the industrial growth of the region. The requirement of the physical inputs for ONGC's operations results in setting of ancillary industries and vendors network, generating a lot of economic potential.

Oil and gas production ushers an era of growth, many core sector industries like power, fertilizer and transport, thrive as a natural consequence of the oil and gas availability. Apart from this, grants-in-aid help in building schools and hospitals. Villages are adopted and several health and community welfare programs are organized in the area around our activities.

Socio-Economic Development Programs

Apart from benefits accruing to the region from the primary function of the corporation i.e. exploration and production of hydrocarbons by way of direct and indirect employment and fiscal contributions to the exchequer of both State and Central Governments. ONGC has been extending full support in the overall development of the areas around its operations all over the country.

Since 1996-97, the execution of these programmes has been further streamlined. Work-centre-wise allocations are made each year and programmes are being executed under the comprehensive guidelines issued on the subject. Major emphasis has been given for promotion of education, health and community development and in times of natural calamities such as floods, cyclones,

earthquakes, landslides, etc. The impact of our concerted efforts is being felt by the community and good-will is being generated. Our programs about health care, eye camps, helping the educational institutions are being widely appreciated.

Socio-Economic Priority Areas

A proactive approach towards socio-economic development is adopted i.e. projects are identified by ONGC at the plant level by involving the district administration, local representatives and recognized voluntary organisations. Priority is given to areas around the projects with the following themes:

Education

Promotion of literacy and higher education

Grant of scholarship & assistance to deserving young pupils of weaker sections of society

Facilities for constructing schools, renovation of school buildings, other infrastructure

Healthcare & Family Welfare

Medical camps

Mobile dispensaries

Supplementing the efforts of already existing health centers in the rural areas

Health care for women, children and disabled

Community Development

Providing civic amenities: sanitation, clean drinking water facilities to panchayats, Gram Sabhas etc.

Development of agriculture and other cottage industries

Environment protection

Animal husbandry

Woman & child development

Support to vocational training institutions for upgrading the skills of the local people

Development of the socially and economically weaker sections of the society

Promotion of art and culture

Calamity relief

Development of infrastructure facilities-improvement of roads, bridges, street lighting, drainage systems, etc.

Sponsoring/ co-sponsoring professional meets, conventions, seminars etc.

Structural Capital

Intangible Assets

- Software with depreciation charged on gross value to get net value of software.
- Software is amortized @ 40% on written down value method
- Goodwill on consolidation = Gross – Amortization
- The difference between the cost of investment in the Subsidiaries/Associates/ Joint Ventures, over the net assets at the time of acquisition of shares in the Subsidiaries/Associates is recognized in the Consolidated Financial Statements as Goodwill or Capital Reserve as the case may be.
- Costs incurred on intangible assets, resulting in future economic benefits are capitalized as intangible assets and amortized on written down value method beginning from the date of capitalization.
- Cost of Right of way for laying pipeline is capitalized as intangible asset and being perpetual in nature is not amortized.
- Technology Imported

Expenses on R&D – Capital and Recurring

- Energy Conservation measures taken include:
- Better water management leading to a saving of Rs 20 Lakh p.a.
- ONGC has four registered CDM projects in its kitty with expected annual CERs of 119, 655.
- Energy conservation measures taken by the company have resulted in reduction of significant quantity of fuel consumption (HSD, Natural gas and electricity) valuing about Rs 166.63 Crore during the financial year 08-09.
- Benefit derived as a result of the above R&D:

a) Scraping frequency has come down from twice a week to once in 3 months in some of the wells thereby reducing the operational cost and improving the productivity of the well.

b) ONGC shall be saving an amount of Rs. 30 Crores approx. per year on electricity charges in Gujarat, considering the present purchase price of electricity. In addition to above 80% depreciation in capital cost in first year & tax holiday for 10 consecutive years during any first 15 years on the revenue earned is the added attraction. In future, when cost of power is bound to increase ONOC's profits through this project will increase proportionately.

The company is hopeful of bagging a big contract in Kuwait and this will open up business opportunities for many other upstream and downstream activities in the Middle East.

Research and development

Research Expenditure

Revenue expenses on Research are charged to Profit and Loss Account, when incurred.

Specific areas in which R&D was carried out:

ONGC along with TERI has been carrying out R&D in the field of Microbial Enhanced Oil Recovery (MEOR), Paraffin Degrading Bacteria (PDB) and Flow Assurance for the last 3-4 years. Field trials on pilot scale were conducted.

Benefit derived as a result of the above R&D

MEOR has been successfully applied to enhance oil recovery from depleted oil wells of Kalol, Limbodra, North Kadi, Sobhasan, Padra and Kosamba.

PDB jobs have been carried out in various wells in Mehsana. This has resulted in reduction of scraping frequency. Scraping frequency has come down from twice a week to once in 3 months in some of the wells thereby reducing the operational

cost and improving the productivity of the well. Flow Assurance jobs are carried out in feeder and flow lines to reduce back pressure at the well head.

Patents

a. Patent has been filed for "Composition and method for dissolution of Strontium Sulphate scales" (No. 1752/MUM/2008) dated 19th Aug 2008), by IOGPT.

b. A Process for treatment of oily effluent produced by petroleum oil industries (under Patent no. 209854, 7 Sep 2007) is being commercialized with its possible applications in KOC's fields.

Clean Development Mechanism

A large scale CDM project titled "Flare Gas Recovery Project at Hazira Plant" was registered by the United Nations Framework Convention on Climate Change (UNFCCC). The project is estimated to earn 8,793 Certified Emission Reduction (CER) annually. With this, ONGC has four registered CDM projects in its kitty with expected annual CERs of 119, 655.

Two more CDM projects, via 51 MW wind power project at Gujarat and Energy Efficiency in amine circulation pump at Hazira have been successfully validated during the year. The total expected CERs from these two projects will be around 91000 per annum. Two other projects are under development.

GHG Accounting

ONGC has pioneered in the field of GHG accounting. This is the first step towards carbon foot printing and full fledged carbon disclosure system and the first step for attaining carbon neutrality. GHG accounting will also help ONGC in benchmarking its operations leading to energy efficiency and help develop new CDM projects. As per the plan, consultant has been engaged in 2008-09 to undertake GHG accounting for nine pilot facilities.

Energy Conservation measures taken earlier which are contributing to Energy saving

The company's proactive steps in energy conservation measures are paying off. Waste heat recovery systems, turbo-expanders, natural gas geysers are successfully running at various installations. Reduced loss of thermal energy through sustained maintenance of steam traps and inter-fuel substitutions are paying off.

Impact of Measures on reduction of energy consumption and consequent impact on the cost of production of the goods.

Above measures taken by the company have resulted in reduction of significant quantity of fuel consumption (HSD, Natural gas and electricity) valuing about Rs 166.63 Crore during the financial year 08-09.

Reduction of Gas Flaring

Gas flaring in Onshore Assets has gradually been reduced from 555 MMSCM in 2001-02 to 88 MMSCM in 2008-09 by taking various measures like creating necessary infrastructure i.e. pipelines, compressors etc. direct marketing of isolated low volume arid low pressure gas and adopting innovative measures as GTW (Gas to Wire). Considering 2001-02 as the base year, these measures have resulted in meaningful utilization 467 MMSCM of gas in 2008-09 alone, in monetary terms this amounts to Rs. 149.44 Crore.

Pioneering Efforts

ONGC is the only fully-integrated petroleum company in India, operating along the entire hydrocarbon value chain:

- Holds largest share of hydrocarbon acreages in India.
- Contributes over 79 per cent of Indian's oil and gas production.
- Refining capacity of about 12 MMTPA.
- Created a record of sorts by turning Mangalore Refinery and Petrochemicals Limited around from being a stretcher case for referral to BIFR to the BSE Top 30, within a year.
- Interests in LNG and product transportation business.

Future Plan of Action

ONGC has formed a joint venture with TERI called `ONGC TERI Biotech Ltd. (OTBL)' incorporated on 26th March, 2007. Director (Onshore) ha been nominated as the Chairman of this company. The company will address the requirement of Bioremediation, Microbial Enhance Oil Recovery and prevention of wax deposition in tubular during E&P operations.

Some of the jobs undertaken by OTBL are as under:

* Contract was signed in November '08 between Mehsana Asset and OTBL for carrying out PDB jobs in 50 wells. As on 01.04.2009, the job has been carried out in 19 wells under the contract. PDB jobs have significantly reduced need of scraping, HOC etc. and the wells are flowing without interruption.

* Ahmedabad Asset has signed a contract with OTBL to do MEOR job in 50 wells along with WDP job for 80 KM flow lines.

* In addition to this OTBL has been the first company to successfully show case the effectiveness of Oilzapper technology in cleaning oil spills in Kuwait. The company is hopeful of bagging a big contract in Kuwait and this will open up business opportunities for many other upstream and downstream activities in the Middle East.

Renewable energy developments:

- ONGC 50 MW Wind Power Project at Bhuj in Gujarat:
- 50 MW Wind Farm Project at Motisindoli site,Village Jakhau, Distt. Kutch of Gujarat is an initiative of ONGC towards its commitment for Environment friendly and pollution free energy production through Renewable Sources using 1.5 MW machines installed at 78 meters high towers. The technology used is near maintenance free & thus the effectiveness of the project is sustainable & continuous. ONGC shall be saving an amount of Rs. 30 Crores approx. per year on electricity charges in Gujarat, considering the present purchase price of electricity. In addition to above 80% depreciation in capital cost in first year & tax holiday for 10 consecutive years during any first 15 years on the revenue earned is the added attraction. In future, when cost of power is bound to increase ONOC's profits through this project will increase proportionately.

Solar Energy Projects:

(a) 12800 LPD Solar Water Heating System installed/ added in present system at ONGC Colony & Officers club at Dehradun.

(b) Solar lights are installed at GCS Gamnewala (Rajasthan Forward Base).

ONGC has been ranked as Number One E&P Company in the world and 25th among leading global energy majors as per Platts Top 250 Global Energy company rankings 2008 (October 2008).

The Company is the only company from India to figure in the elite list of 40 companies, out of Fortune Global 500 companies list of 2009, based on Return on Revenues and Return on Assets.

The Company occupies 152nd rank in the Forbes Global 2000 list 2009 of the world's biggest companies, 46 notches higher than last year's rank of 198th, based on sales, profits, assets and market capitalization.

Value-multiplier projects:

The value-multiplier projects which the Company is pursuing in the area of Petrochemicals, SEZ, Power etc., are progressing well and once commissioned, will signify integrated dimension to the Company's business pursuits.

Depreciation:

The Company is mainly in the oil and gas exploration and production activities where each cost centre used for depreciation (depletion) purposes has been identified as independent Cash Generating Unit (CGU) for assessing the impairment in Producing Properties and fixed assets etc. on the basis of `value in use'. The Company has tested all its assets for impairment by applying discount rates of 16.61% (Previous year 15.64%) for Rupee transactions and 13.40% (Previous year 11.13%) for crude oil and value added products revenue measured in USD as on 31.03.2009.

The Company had changed the rate of depreciation in 2005-06 on all Trunk Pipelines and Onshore Flow Lines (assets below ground) from 27.82% to 100% based on technical assessment by the management. The Company had made a reference to the Ministry of Corporate Affairs in 2006-07 for confirmation of the rate of depreciation. Pending confirmation by the Ministry, the company continues to charge depreciation at 100% on such assets.

Borrowing Costs:

Borrowing Cost specifically identified to the acquisition or construction of qualifying assets is capitalized as part of such assets. A qualifying asset is one that necessarily takes substantial period of time to get ready for intended use. All other borrowing costs are charged to Profit and Loss Account.

Rig Days Costs:

Rig movement costs are booked to the next location planned for drilling. Abnormal Rig days' costs are considered as unallocable and charged to Profit and Loss Account.

Deferred Revenue Expenditure:

Dry docking charges of Rigs/ Multipurpose Supply Vessels (MSVs), Geo Technical Vessels (GTVs), Well Stimulation Vessels, Offshore Supply Vessels (OSVs), Rig/equipment mobilization expenses and other related expenditure are considered as deferred expenditure and amortized over the period of use not exceeding five years.

Provisions, Contingent Liabilities and Contingent Assets:

Provisions involving substantial degree of estimation in measurement are recognized when there is a present obligation as a result of past events and it is probable that there will be an outflow of resources. Contingent Assets are neither recognized nor disclosed in the financial statements. Contingent liabilities, if material, are disclosed by way of notes to accounts.

Health, Safety & Environment (HSE)

The company has implemented globally recognized QHSE management systems conforming to requirements of ISO 9001, OHSAS 18001 and ISO 14001 at ONGC facilities and certified by reputed certification agencies at all its operational units. Surveillance Audits for sustaining HSE accreditation was carried out in 408 units during the year. In addition to this, 248 HSE (Process Safety) Audit were carried out during the year. The Company also carried out Safety Management Perception Survey for the offshore operations through globally reputed consultant M/s DuPont.

Costs incurred on intangible assets, resulting in future economic benefits are capitalized as intangible assets and amortized on written down value method beginning from the date of capitalization.

Cost of Right of way for laying pipeline is capitalized as intangible asset and being perpetual in nature is not amortized.

All wells under "exploratory wells in progress" which are more than two years old from the date of completion of drilling are charged to Profit and Loss Account

except those wells where it could be reasonably demonstrated that the well has proved reserves and the development of the field in which the wells are located has been planned.

All costs relating to development wells are initially capitalized as development wells in progress and transferred to producing properties on completion as per policy no. 6.4.1

Sustainability and Green Initiatives

ONGC has taken structured initiatives for Alternate Energy sources. Retaining focus on Oil & Gas, ONGC is bringing up an Energy Centre in Delhi housed in 'Rajiv Gandhi Urja Bhawan' for holistic research in alternate energy sources. ONGC has also taken concrete steps to tap unconventional energy sources like Coal Bed Methane (CBM) and Underground Coal Gasification (UCG). ONGC is also investing in Renewable Energy Sources; its first Wind Power Generation plant (50 MW) has come up in Gujarat.

Declared as the Greenest Indian Company by the A C Nielsen - ORG MARG Survey, 2004, ONGC, is the only oil company in the SAARC region and the only public sector in India to have Carbon Credits on its balance sheet. Among its noteworthy initiatives, the prime achievements of ONGC have been in reducing emissions, reducing effluent discharge, phasing out of Halon fire suppression systems with environment-friendly systems, extensive mangrove plantation for shoreline protection, ringal bamboo plantation in Upper Himalayas for sustaining Himalayan ecosystem, bio-remediation for sludge treatment at ONGC installations. To integrate Environment Sustainability in its business, ONGC has also been actively pursuing a number of Clean Development Mechanism (CDM) projects, alternate sustainable source of energy and Carbon Neutrality. All operational units of ONGC are certified with ISO 9001, 14001 and OHSAS-18001.

A principle of precautionary approach is built into ONGC's environmental management system. Right from the inception of the project development stage, environmental risks are identified and incorporated in the Environmental Impact Assessment report and are monitored during implementation phase. Keeping in

view the climate change issues ONGC has embarked upon comprehensive program to review its operations in the light of reduction of maximum carbon foot prints in future. Also, ONGC is certified with ISO 14001 EMS for all of its installations which also ensures appropriate measures are taken for the environmental risks identified under the system.

ONGC has embarked upon ambitious initiatives to manage and reduce GHG emissions, which may be broadly classified into the following categories:

_ Reporting of GHG emissions

_ Energy efficiency / conservation plans

_ Gas Flaring reduction

_ Renewable energy

To ensure implementation of its policy framework, ONGC has specially formed the following groups that work full-time towards implementation of the Company's policies :

_ Carbon Management Group

_ Energy Centre – For research in non-conventional energy sources

_ Health Safety and Environment Group

ONGC is committed to consistent reporting of GHG emissions and follows the *Compendium of Greenhouse Gas Emissions Estimations Methodologies for Oil and Gas Industry* developed by American Petroleum Institute (API).

Carbon dioxide makes up most of their GHG emissions (to the extent of 55-57%) and it comes predominantly from our processing operations, including exhaust from combustion units and flares. Their GHG reporting includes direct emissions associated with the drilling, production and processing of oil & gas and indirect emission from purchased grid electricity for use in their operations.

ONGC has taken several initiatives in order to promote greater environmental responsibility which extend beyond regulatory requirements.

Paper Recycling:

ONCG has taken initiative to recycle waste papers from its offices to recycle through credible organizations. So far ONGC has been able to ensure more than 60,000 kg of paper is recycled.

Drill Cutting Reuse:

ONGC has undertaken a research project to study the feasibility of applying drill cuttings in construction of approach roads to operational sites. The findings of the study will be helpful to resolve the problem of disposal of drill cuttings in secured land fills which is cost intensive and occupies the precious land for all the times to come.

Waste-to-Energy:

In a yet another endeavor, ONGC has initiated a project in which organic waste will be collected from ONGC's residential colony at NOIDA and digested anaerobically to produce biogas. The biogas thus produced will be utilized for cooking activities. Thus load on municipal solid waste sites is minimized and clean energy is derived out of waste

All installations certified for ISO-14001 & OHSAS-18001management systems. Well experienced & equipped CRISIS Management team – expertise used by other companies as well Disaster Management Plan in place Uran Processing Plant rated ISRS-7 level; first in country FY'10: Surveillance audit of 402 installation taken up for sustaining QHSE Management system

Sustainability Reporting

ONGC's first Sustainability report under GRi-G3 guidelines of ONGC is underway for the year 2009-2010.

Six CDM projects registered with UNFCCC, ONGC is the only Indian PSU to achieve this feat.

Global Rankings/Recognitions:

* Number one E&P Company in world and 25th among leading global energy majors as per Platts Top 250 Global Energy company rankings 2008; based on assets, revenues, profits and Return on Invested Capital (ROIC) (October 2008).

* Ranked 23rd among the Global publicly-listed energy companies as per 'PFC Energy 50' list (January 2009).

* Leading Indian Multinational Enterprise (MIME) as per a recent survey by the Indian School of Business, Hyderabad and the Vale Columbia Center on

Sustainable International Investment (VCC) at Columbia University, New York (May 2009). Occupies 152nd rank in the Forbes Global 2000 list 2009 of the world's biggest companies (up 46 notches than last year's rank of 198th position) based on sales, profits, assets and market capitalization (April 2009).

* Only company from India to figure in the elite list of 40 global companies as per Return on Revenues (27th rank) and Return on Assets (30th rank) in the Fortune Global 500 list of 2009; with overall rank of 402. (July 2009).

Indian Rankings/Recognitions:

Ranked 3rd in the Business World Real 500 survey list of the Indian companies on the sum of total assets and total income of a company (October 2008).

Awards & Accreditations:

Secured three out of eight Petrofed Awards 2008, instituted by Petroleum Federation of India (Petrofed), for performance during 2007-08. (April 2009).

* Leading Oil & Gas Corporate of the year.

* Exploration & Production Company of the Year.

* Project Management (above Rs. 2000 Crore) - Company of the Year for the year 2008.

* Bagged all the National Mines Safety Awards (12 awards), in Oil Mine Category, for the year 2004, 2005 & 2006. (May 2008)

* Gold Trophy for 'SCOPE Meritorious Award for Good Governance 2006-2007'. (November 2008)

* Commendation for Strong Commitment, CII-ITC Sustainability Awards-2008. (December 2008)

* Maiden Golden Peacock Award for Combating Climate Change - 2008 instituted by Institute of Directors (IOD). (May 2008)

* Enterprise Excellence Award in recognition of excellent corporate performance instituted by Indian Institution of Industrial Engineers (HIE). (May 2008)

* Best Public Sector Award 2008 instituted by Public Relations Society of India (PRSI). (August 2008)

* Winner's trophy of the maiden 'Earth Care Award for excellence in climate change mitigation and adaptation' under the category of 'GHG mitigation in the small/ medium and large enterprises' instituted by Times of India and JSW foundation to recognize local and relevant actions to tackle climate change. (April 2008)

* Awarded the first Dalal Street Investment Journal (DSIJ) PSU Awards 2009 for the category Highest Profit making Enterprise for the FY 2007-08. (March 2009)

* SAP- Awards for Customer Excellence (ACE) for the year 2008 in the category `Extended Supply Chain (SRM)' for implementation of reverse auction process on the SAP-SRM platform; the first PSU to successfully implement the process. (September 2008)

* Award for Excellence in Environmental Sustainability of Business 2007-08, instituted by The Federation of Indian Chambers of Commerce and Industry (FICCI). (February 2009)

* Amity Corporate Excellence Award for Dominant Leadership & Global Presence instituted by the Amity International Business School, NOIDA. (February 2009)

Awards to Business units:

Assam Asset: Greentech Safety Silver Award-2008 for two of the Surface installations of Assam; CTF-Lakwa and GCP-Rudrasagar (RDS). (April 2008)

Cauvery Asset: Greentech Safety Silver Award-2008 (April 2008); Corporate Social Responsibility Award instituted by the Tamil Nadu Government. (March 2009)

Tripura Asset: Greentech Safety Silver Award-2008 (September 2008); Fire Services, Tripura Asset received ISO: 9001:2001 certification for Quality Management System. (QMS) (September 2008)

Rajahmundry Asset: Greentech Safety Silver Award-2008 (September 2008).

Ahmedabad Asset: Greentech Safety Silver Award-2008 (September 2008).

Hazira Plant: Greentech Safety Gold Award-2008 for the record sixth time. (September2008);Greentech Environment Excellence Award 2008. (September

2008); 'National Award 2008' from National Institute of Total Productive Management (November 2008).

Uran Plant: First installatio in India to be awarded Level - 7certification under ISRS 7th edition. (February 2009).

Institute of Drilling Technology (IDT): Golden Peacock Eco-innovation Award 2008 for development of 'Eco-friendly Defoamer'. (January 2009).

Human Capital

Human Resources

The Human Resource value of the employees based on "Lev and Schwartz" model is enclosed at **Annexure 'B'**.

Human resource value - 12 institutes run under ONGC

HR Vision, Mission & Objectives

HR Vision

"To build and nurture a world class Human capital for leadership in energy business".

HR Mission

"To adopt and continuously innovate best-in-class HR practices to support business leaders through engaged, empowered and enthused employees".

HR Objectives

Enrich and sustain the culture of integrity, belongingness, teamwork, accountability and innovation.

Attract, nurture, engage and retain talent for competitive advantage.

Enhance employee competencies continuously.

Build a joyous work place.

Promote high performance work systems.

Upgrade and innovate HR practices, systems and procedures to global benchmarks.

Promote work life balance.

Measure and Audit HR performance.

Promote work life balance.

Integrate the employee family into the organizational fabric.

Inculcate a sense of Corporate Social responsibilities among employees.

Measuring HR Performance

HR Parameters have been incorporated in the MOU by ONGC since 1994-95, to systematically and scientifically evaluate effectiveness of HR Systems, which enables and facilitates time bound initiatives.

HR Parameters of MoU for 2009-2010

Mentoring and coaching

HR Audit

Engagement Survey

Continuous professional education credit course for finance executives of ONGC.

A Motivated Team

HR policies at ONGC revolve around the basic tenet of creating a highly motivated, vibrant & self-driven team. The Company cares for each & every employee and has in-built systems to recognize & reward them periodically. Motivation plays an important role in HR Development. In order to keep its employees motivated the company has incorporated schemes such as **Reward and Recognition Scheme**, **Grievance Handling Scheme** and **Suggestion Scheme**.

Incentive Schemes to Enhance Productivity

Productivity Honorarium Scheme

Job Incentive

Quarterly Incentive

Reserve Establishment Honorarium

Roll out of Succession Planning Model for identified key positions

Group Incentives for cohesive team working, with a view to enhance productivity

Human Resource/ Industrial Relations

Human Resource Development (HRD) has always been one of the constantly focused action point for the management of the Company. The practices adopted under HRD concentrate on nurturing and developing talent for the core activities of the organization. Due to these endeavors, the Company has the finest pool of Scientists, Engineers and Professionals.

Retaining talent has always been a challenge; however, with innovative practices the Company has been able to restrict attrition. The Company also endeavors to meet the genuine expectations of the employees through various welfare measures.

During the year, ONGC faced the destabilizing situation of agitation programmes by OSOA/ASTO over the issue of pay revision of Oil Sector Officers. The hard-line approach by the agitators culminated into strike during 7-9 January 2009 in almost all oil sector PSUs, causing serious disruption of operations in ONGC at all work centres. Post strike, strict measures have been taken to curtail disruptive activities. However, through direct communications, suitable measures have been taken to improve employee motivation. Except for this disruptive action by ASTO leadership, harmonious Industrial Relations were maintained all over the company.

Industrial Relations

During the year, the Company faced the destabilizing situation of agitation programmes by OSGWASTO over the issue of pay revision of Oil Sector Officers. The hardline approach by the agitators culminated into strike for 3 days from 07.01.2009 to 09.01.2009 all across oil PSUs.

Operations at ONGC were also disrupted at all work centres. A total of 418,123 man hours were lost during the strike and net monetary loss incurred by the company on account of strike was approx. Rs.1,310 million.

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Welfare Trusts

Employees Contributory Provident Fund (ECPF) Trust, managing Provident Fund accounts of employees of the Company, has settled 4,873 cases of final withdrawals and 1,813 cases for non-refundable withdrawals during the year. The Trust has initiated e-payments to its members.

Post Retirement Benefit Scheme (PRBS) Trust of the Company, set up to provide financial security to superannuating employees, settled 662 cases of pensionary benefits and 309 cases of withdrawal benefits during the year.

The Composite Social Security Scheme (CSSS) formulated by the Company provides an assured ex-gratia payment in the event of unfortunate death or permanent disability of an employee in service. Families of the deceased employees get financial assistance under the scheme ranging from Rs.1.5 million to Rs 2.0 million. During the year, CSSS Trust has settled 118 cases for death/permanent total disability and 949 cases for survival benefit refund cases.

Gratuity Fund Trust, created for payment of gratuity with provisions of "Gratuity Rules", settled 868 cases during the year 2008-09.

ONGC Sahayog Trust has been created for welfare of secondary workforce or their heirs, who are in financial distress.

Approximately, Rs. 5.2 million was disbursed during the year amongst 105 beneficiaries.

The Company implemented the Employees Pension Scheme (EPS-1995) retrospectively w.e.f 16th November 1995 and remitted Rs. 207.60 million as employer's contribution during the year.

The Company complies with the Government guidelines on reservations for SC and ST. The percentage of SC and ST employees as on 1st April 2009 was 15.82 % and 8.44 % respectively. During the year 2008-09, over Rs. 20 million was spent for welfare of the priority communities.

Implementation of Official Language Policy

The Company makes concerted effort to spread and promote Official Language. The first Hindi e-Magazine 'Sahastradhara' was launched during the year.

Human Resource Development

Several HRD initiatives were taken like HR Audit, Coaching & Mentoring, Business Games, Advanced & Senior Management programmes for senior officers.

During the year, ONGC Academy conducted 244 training programmes for 7,561 executives (130,252 training days). The Regional Training Institutes conducted training for 4,766 non-executives (16,594 mandays).

Voluntary Retirement Scheme

Expenditure on Voluntary Retirement Scheme (VRS) is charged to Profit and Loss Account.

Sports persons

Around 150 sportspersons including 95 international level performers are on the rolls of ONGC representing the Company in 15 different games.

ONGC hosted the ONGC Nehru Cup International Invitational Tournament during 2007-08.

Chess Queen Koneru Humpy was conferred with Padmashri and Badminton ace Chetan Anand received the Arjuna Award.

Reigning World Billiards Champion Pankaj Advani retained his title after an 'all ONGC Final' in which Dhruv Sitwala was the Runner-up

Arjuna Awardee Virender Sehwag became the first Indian and third cricketer to score two triple Test centuries.

The Company won the Petroleum Minister's PSPB Trophy for Overall Best Performance in 2007-08 for the fifth year in

succession

Annexure- B | Human Resource Value

Employees as on 31st March, 2009

Employee Group	Age Distribution				Total	
	<31	31-40	41-50	51-60	2008-09	2007-08
(A) Technical						
Executive	992	1246	9166	7706	**19110**	18379
Non-Executive	103	603	2022	724	**3452**	3997
Total (A)	1095	1849	11188	8430	**22562**	22376
(B) Non-Technical						
Executive	182	445	1778	2429	**4834**	4638
Non-Executive	64	759	2606	2210	**5639**	5982
Total (B)	246	1204	4384	4639	**10473**	10620
Grand Total (A+B)	**1341**	**3053**	**15572**	**13069**	**33035**	**32996**

Note : Whole time Directors excluded

Valuation as on 31st March, 2009 (Rs. in million)

Employee Group	Age Distribution				Total	Value per Employee	
	<31	31-40	41-50	51-60		2008-09	2007-08
(A) Technical							
Executive	24,008.8	27,588.8	143,715.9	63,451.8	**258,765.3**	**13.5**	9.7
Non-Executive	1,295.6	6,854.4	20,000.7	3,676.2	**31,826.9**	**9.2**	8.4
Total (A)	25,304.4	34,443.2	163,716.6	67,128.0	**290,592.2**	**12.9**	9.5
(B) Non-Technical							
Executive	4,211.3	9,435.8	25,459.0	18,175.0	**57,281.1**	**11.8**	8.7
Non-Executive	793.5	7,784.2	20,749.1	7,969.1	**37,295.9**	**6.6**	6.4
Total (B)	5,004.8	17,220.0	46,208.1	26,144.1	**94,577.0**	**9.0**	7.4
Grand Total (A+B)	**30,309.2**	**51,663.2**	**209,924.7**	**93,272.1**	**385,169.2**	**11.7**	8.8

* Valuation based on most widely used " Lev & Schwartz" model.
* Aggregate future earnings during remaining employment period of employees, discounted @ 7% p.a., provides present valuation
* Future earnings based on current emoluments with normal incremental profile.

Framework applied to ONGC Ltd

Human Capital		
	Training and development expenses per employee	Expenditure on Employees 47,396 Million Rs Number of Employees 33,035
	Benefits from training exercises	Created awareness as part of energy conservation by providing training on Energy conservation techniques to 12389 employees of ONGC at Delhi, Dehradun, Agartalla, Rajahmundry, Chennai, Karaikal, Bokaro, Kolkatta, Uran, Ahmedabad, Ankleshwar, Mehsana, Jodhpur, Sibsagar/ Nazira. It is expected that by imparting this

		training they can bring down the energy bills by 20%
	Image of company from employees perspective	Ranked at top of the Best companies to work for in Core Sector by Business Today in Feb 2010 edition. • Golden Peacock Global Award 2007 for Excellence in Corporate Governance 2009", conferred by World Council of Corporate Governance, London. • Bagged "BML Munjal Award" for Excellence in Learning & Development in Public Sector category.
	IP assets	**Patents** a. Patent has been filed for "Composition and method for dissolution of Strontium Sulphate scales"(No. 1752/MUM/2008 dated 19th Aug 2008), by IOGPT. b. A Process for treatment of oily effluent produced by petroleum oil industries (under Patent no. 209854, 7 Sep 2007) is being commercialized with its possible applications in KOC's fields.
	Knowledge/Skill	Intangibles – Software - Rs 4,741.25 Intangible Assets Costs incurred on intangible assets, resulting in future economic benefits are capitalized as intangible assets and amortized on written down value method beginning from the date of capitalization. Cost of Right of way for laying pipeline is capitalized as intangible asset and being perpetual in nature is not amortized.
	Innovation Capital	Golden Peacock Eco-innovation Award 2008 for development of

		'Eco-friendly Defoamer'. (January 2009)
	Discovery	ONGC's exploratory efforts in this direction have led to another CBM discovery in Bokaro during FY'09. Pilot CBM production from its earlier discovery in Parbatpur is expected to commence this year. The Company is operating in 5 CBM Blocks i.e., Jharia, Bokaro, North Karanpura and South Karanpura Blocks in Jharkhand and Raniganj Block in West Bengal. Significant new discovery has been made in CBM block BK-CBM-2001/1 in the state of Jharkhand. Pilot CBM production from its earlier discovery in Parbatpur is expected to commence this year.
	Employees and Employee competence	Total Value of employees – Rs 385,169.2 Million Value per employee - 11.7 Million
	Human resources and Human resource practices	Human Resource Development (HRD) has always been one of the constantly focused action point for the management of the Company. The practices adopted under HRD concentrate on nurturing and developing talent for the core activities of the organization. Due to these endeavours, the Company has the finest pool of Scientists, Engineers and Professionals. Retaining talent has always been a challenge; however, with innovative practices the Company has been able to restrict attrition. The Company also endeavours to meet the genuine expectations of the employees through various welfare measures. During the year, ONGC faced the destabilizing situation of agitation

		programmes by OSOA/ASTO over the issue of pay revision of Oil Sector Officers. The hard-line approach by the agitators culminated into strike during 7-9 January 2009 in almost all oil sector PSUs, causing serious disruption of operations in ONGC at all work centres. Post strike, strict measures have been taken to curtail disruptive activities. However, through direct communications, suitable measures have been taken to improve employee motivation. Except for this disruptive action by ASTO leadership, harmonious Industrial Relations were maintained all over the company.
		The Company has vast pool of skilled and talented professionals; the most valuable asset for the company. The Company continued to extend several welfare benefits to its employees by way of comprehensive medical care, education, housing and social security. During the year 2008-09, the Company implemented 92 new and revised welfare policies for its employees. Fifty four employees were released under the Voluntary Retirement Scheme during the year. The Human Resource value of the employees based on "Lev and Schwartz" model is enclosed at Annexure 'B'. Several HRD initiatives were taken like HR Audit, Coaching & Mentoring, Business Games, Advanced & Senior Management programmes for senior officers. During the year, ONGC Academy conducted 244 training programmes for 7,561 executives (130,252 training days). The Regional

		Training Institutes conducted training for 4,766 non-executives (16,594 mandays). "Interactive Interpretation Work Station" was installed and commissioning of all Hardware completed on 30-09-08 in Ankleshwar Asset. Training on System administration and Users' training on all software modules under Category-I completed.
	Training	
Structural Capital		
	Number of new product introductions	New CDM projects
	R& D expenditure as a % of administration	Total R&D Expenditure as a percentage of Total Turnover 0.32% 0.30%
	Research and development	2008-09 2007-08 Capital 500.60 93.42 Recurring1,574.44 1,753.32 Total 2,075.04 1,846.74
	Technology	Information Regarding Imported Technology: Information Regarding Imported Technology (Imported during the last five years from the beginning of the Financial Year) published in Annual Report
	Internal Structure	**Internal Control Systems** E&P operations need infallible control systems. The company has high standards and effective methods of monitoring its technology and field operations. Internal and external audits by internal groups and external bodies are conducted on regular basis to ensure that statutory safety and other government guidelines are being followed.
	Capital expenses	Net capital works-in-progress 116,964.57
	Licenses	Four licenses for G&G modules (OpenWorks-2, SeisWorks-1 and

		StratWorks-1 of M/s Landmark Graphic Corporation).Three licenses for Reservoir Simulation (Model Builder-3 of M/s Computer Modeling Group Limited).
	Franchise	
	Future interests	Standardized measure of Discounted Future Net Cash Flows relating to Proved Oil and Gas Reserve quantities as on 31st March, 2009. Future Plan of Action: ONGC has formed a joint venture with TERI called 'ONGC TERI Biotech Ltd. (OTBL)' incorporated on 26th March, 2007. Director (Onshore) has been nominated as the Chairman of this company. The company will address the requirement of Bioremediation, Microbial Enhance Oil Recovery and prevention of wax deposition in tubular during E&P operations. Some of the jobs undertaken by OTBL are as under: • Contract was signed in November '08 between Mehsana Asset and OTBL for carrying out PDB jobs in 50 wells. As on 01.04.2009, the job has been carried out in 19 wells under the contract. PDB jobs have significantly reduced need of scraping, HOC etc. and the wells are flowing without interruption. Ahmedabad Asset has signed a contract with OTBL to do MEOR job in 50 wells along with WDP job for 80 KM flow lines. In addition to this OTBL has been the first company to successfully show case the effectiveness of Oilzapper technology in cleaning oil spills in Kuwait. The company is hopeful of bagging a big contract in

		Kuwait and this will open up business opportunities for many other upstream and downstream activities in the Middle East.
	Culture	The management and employees of the Company are committed to uphold the core values of transparency, integrity, honesty and accountability.
	Strategy	The Company has a practice of periodic retreats where all members of the Board and senior officials of the Ministry of Petroleum & Natural Gas discuss issues of Corporate Strategy and Policy. The 7th Strategy Meet was held on 27-28 September, 2008 at Narendranagar.
	Relational structure	The Company's website www.ongcindia.com contains separate dedicated section 'Investor Relations' where the shareholders information is available. Human Resource Development (HRD) has always been one of the constantly focused action point for the managment of the Company. The practices adopted under HRD concentrate on nurturing and developing talent for the core activities of the organization. Due to these endeavours, the Company has the finest pool of Scientists, Engineers and Professionals.
	External validation	Recognitions, Awards and Accreditations given in Appendix 4
	Corporate Governance	The Company believes in adopting the best practices in the areas of Corporate Governance. Corporate Governance is viewed as a value to be imbibed and an ideology to be ingrained into the corporate culture. Company's philosophy on corporate governance is led by strong

		emphasis on human values, individual dignity and adherence to honest, ethical and professional conduct.
External Capital		
	External structure	Declared as the Greenest Indian company by the A C Nielsen - ORG MARG Survey, 2004, ONGC, is the only oil company in the SAARC region and the only public sector in India to have Carbon Credits on its balance sheet. Among its noteworthy initiatives, the prime achievements of ONGC have been in reducing emissions, reducing effluent discharge, phasing out of Halon fire-suppression systems with environment-friendly systems, extensive mangrove plantation for shoreline protection, Ringal bamboo plantation in Upper Himalayas for sustaining Himalayan ecosystem, bio-remediation for sludge treatment at ONGC installations. To integrate Environment Sustainability in its business, ONGC has also been actively pursuing a number of Clean Development Mechanism (CDM) projects, alternate sustainable source of energy and Carbon Neutrality. All operational units of ONGC are certified with ISO 9001, 14001 and OHSAS-18001.
	Customers	Corporate Governance philosophy is based on the following principle of protection of the interest of all the stakeholders including employees, customers, vendors, shareholders and investors.
	Reputation of the company	ONGC is spearheading the United Nations Global Compact - World's biggest corporate citizenship initiative to bring Industry, UN bodies, NGOs, Civil societies and corporate on the same platform. During the year, the Company has undertaken various CSR projects at

		its work centers and corporate level.
	Investor capital	ONGC owns and operates more than 22000 kilometers of pipelines in India, including nearly 4500 kilometers of sub-sea pipelines. No other company in India, operates even 50 per cent of this route length.
	Stakeholder resources	NO INFORMATION
	Social and green responsibilities	Global Compact Annual Communication on Progress 2009

Case 4

Reliance Industries Ltd

Industry :Refineries

The basis of the selection of the company is its highest market capitalization in India. This is because it has been established that high market capitalization is influenced by intangibles possessed and disclosed by the company. The data given below has been extracted from information available on the company's website. The website was chosen as the database purposely so as to assess the extent of disclosures made by the company for general public. Again because this is the information which influences the perception of the common investor towards the company which in turn governs its market capitalization.

About the company

Reliance Industries Ltd is an India-based company. The company is India's largest private sector company on all major financial parameters. They are the first private sector company from India to feature in the Fortune Global 500 list of 'World's Largest Corporations' and ranks 117th amongst the world's Top 200 companies in terms of profits. The company operates world-class manufacturing facilities across the country at Allahabad, Barabanki, Dahej, Hazira, Hoshiarpur, Jamnagar, Nagothane, Nagpur, Naroda, Patalganga, Silvassa and Vadodara.

The company operates in three business segments: petrochemicals, refining, and oil and gas. The petrochemicals segment includes production and marketing operations of petrochemical products. The refining segment includes production and marketing operations of the petroleum products. The oil and gas segment includes exploration, development and production of crude oil and natural gas. The other segment of the company includes textile, retail business and special economic zone (SEZ) development.

In the year 1966 the RIL was founded by Shri Dhirubhai H.Ambani, it was started as a small textile manufacturer unit. In May 8, 1973 RIL was incorporated and conformed the name as RIL in the year 1985. Over the years, the company has

transformed their business from manufacturing of textiles products into a petrochemical major.

The company has set up a texturising / twisting facilities in 1979, RIL has also set up plants for Polyester Staple Fiber (PSF) in 1986 and for Linear Alkyl Benzene (LAB) & Purified Terephthalic Acid (PTA) in 1988. RIL has setup a petrochemical facility to produce HDPE and PVC at Hazira, Gujarat in technical collaboration with DuPont and BF Goodich respectively. The Hazira petrochemical plant was commissioned in 1991-92.

In the year 1995-96, the company entered the telecom industry through a joint venture with NYNEX, USA and promoted Reliance Telecom Private Limited in India. Reliance became the first corporate in Asia to issue bonds in the U.S at the year of 1996-97. The company commissioned an 80,000 tonne bottle grade PET chip plant at Hazira manufacturing complex. Reliance's PET chips has been accepted internationally due to their high quality during the year 1997-98 and in the same year Reliance Industries Planned to invest around Rs. 5000 crores (USD 1,250 million) in building two world-scale plants at the site of the Jamnagar refinery in Gujarat. In 1998-99, RIL introduced packaged LPG in 15 kg cylinders under the brand name Reliance Gas. In 1999-2000, RIL commissioned the world's largest 1.4 million tonnes per annum Paraxylene (PX) plant at its new integrated petrochemicals complex at Jamnagar which was planned at 1997-98. Reliance Petroleum Limited (RPL) was amalgamated with Reliance Industries Ltd in the year 2002-03.

In 2004-05, RIL acquired the polyester major, Trevira GmbH, headquartered in Frankfurt, Germany which has the capacity of 130,000 tonnes per annum of polyester staple fibers, polyester filament yarns and polyester chips. In the year 2006, the company set up a new export-oriented refinery through its subsidiary, Reliance Petroleum Limited (RPL).

In the year 2007, Indian Petrochemicals Corporation Limited (IPCL) merged with the company. Also, Reliance Retail entered the organised retail market in India with the launch of its convenience store format under the brand name of 'Reliance Fresh'. During the year, the company commissioned their largest

expansion project. The company expanded its polypropylene (PP) capacity by 280 KTA at Jamnagar that increased the combined capacity to 1,710 KTA.

During the year 2007-08, the company signed an agreement to certain polyester (capacity) assets of Hualon, Malaysia. It took over the majority control of Gulf Africa Petroleum Corporation (GAPCO) and started shipping products to the East African markets. Also, the company signed MoU with GAIL (India) Ltd to explore opportunities of setting up petrochemical plants in feedstock rich countries outside India. In April 2008, the company signed gas sales and purchase agreement (GSPA) with the customers in power sector for supply of natural gas to be produced from the KG-D6 block.

In April 2010, the company commissioned a 1 MW solar Photo Voltaic power plant at Thyagaraj stadium in New Delhi. The power plant is expected to generate around 1.4 million units of electricity a year. It would cater to the power requirements of the stadium and the surplus would be fed to the grid at 11 KV. In addition, the company's subsidiary Reliance Marcellus LLC executed definitive agreements to enter into a joint venture with United States based Atlas Energy, Inc, of Pittsburgh, Pennsylvania under which Reliance will acquire a 40% interest in Atlas' core Marcellus Shale acreage position.

Details on Company's Reporting on Intangibles

Vision

Through sustainable measures, create value for the nation, enhance quality of life across the entire socio-economic spectrum and help spearhead India as a global leader in the domains where we operate

Mission

- Create value for all stakeholders
- Grow through innovation
- Lead in good governance practices
- Use sustainability to drive product development and enhance operational efficiencies
- Ensure energy security of the nation
- Foster rural prosperity

Values

The growth and success are based on the ten core Values of *Care, Citizenship, Fairness, Honesty, Integrity, Purposefulness, Respect, Responsibility, Safety and Trust*

Relational Capital

Social Responsibility and Community Development

RIL has a long and strong tradition of supporting the larger communities that it connects with - from education, health, drinking water, large-scale development of employable skills, to assistance during natural calamities such as earthquakes and cyclones.

"I strongly believe that we can, and should do, much more.I also believe that this effort has to bring into play RIL's strengths of strategic planning, meticulous detailing and flawless execution on a large format". With this perspective in mind, Shri Mukesh D. Ambani announced the launch of 'The Reliance Foundation' in November 2009.

The Reliance Foundation would address social development imperatives of India, specifically quality, formal and vocational eduation, affordable high-quality health care, meaningful rural development and urban renewal, and protection and promotion of India's priceless heritage of arts and culture.

Structural Capital

RIL's Sustainability Reporting Initiative

"We have embraced sustainability as our core business strategy. We believe sustainability is the very foundation of lasting success. We will use sustainability principles to drive process innovation, new product development, improving manufacturing efficiencies and reducing material and energy consumption. This commitment is backed by active initiatives on the ground". - **Mukesh D. Ambani**

RIL commenced reporting, annually, on its triple-bottom line performance, from FY 2004-05. All its sustainability reports are externally assured and are GRI checked. The maiden report received 'in-accordance' status from GRI and all subsequent reports are 'GRI Checked A+' application level reports.

RIL's maiden sustainability report, titled 'Life', is the first sustainability report from the Indian Oil & Gas sector and was based on the internationally accepted Global Reporting Initiative's (GRI) Guidelines 2002. Subsequent reports are based on G-3 guidelines - the new set of sustainability reporting guidelines launched by GRI in October 2006.

Further, from FY 2006-07, in addition to referring GRI G3 guidelines, RIL refers The American Petroleum Institute / The International Petroleum Industry Environmental Conservation Association's (API/ IPIECA) guidelines and The United Nations Global Compact (UNGC) principles and have aligned the sustainable development activities with the 'Focus Areas' of The World Business Council for Sustainable Development (WBCSD). RIL articulates its Sustainability Vision, Mission & Values, the Sustainability Strategy and Road Map in its report for FY 2007-08.

Financial Year	**Title of the Sustainability Report**	**GRI Application Levels**
2007-08	Transforming Life, Redefining Tomorrow	GRI Checked A+
2006-07	Small Acts, Big Impact	GRI Checked A+
2005-06	My Reliance, My Life	GRI Checked A+
2004-05	Life	In-Accordance

Commitment :

- RIL is an organisational stakeholder of GRI since 2007.
- On invitation to Shri Mukesh Ambani, Reliance Industries Limited became a Council Member of World Business Council for Sustainable Development (WBCSD) in 2007. Shri Mukesh Ambani has been elected as Vice Chairman of WBCSD's Executive Committee in 2008.

Recognition :

- Amongst 'India's 10 largest companies by market capitalisation', International Finance Corporation (IFC) [Word Bank Group] has rated

RIL's Sustainability Report's reporting quality as "good" - the highest rating given in this report, in 2009.

Sustainability Strategy

At Reliance, they have made sustainable development a cornerstone of their business strategy to achieve sustainable and profitable growth. The firm adopted principle of materiality and prioritized key issues after collective deliberation by management and key stakeholders. These issues include;

Their sustainable development strategy draws on proven technology and risk management framework and evolves from the materiality analysis that the firm has been performing over the years. The focus areas under our sustainability development strategy include the following:

Energy Security, Health & Safety, Corporate Governance and Transparency, Product Responsibility, Climate Change and Waste Management.

The sustainable development strategy draws on their proven technology and risk management framework and evolves from the materiality analysis that they have been performing over the years. The focus areas under the sustainability development strategy include the following:

- Energy Security
- Growth through Innovation
- Health & Safety
- Environment
- Product Responsibility
- Social Institution Building

I. Energy Security

As a company involved in the energy and materials value chain, the firm is committed to responsible use of energy. The systems and processes ensure optimum energy usage by continuous monitoring of all forms of energy and increasing the efficiency of operations.

The firm's endeavour in exploration & production of oil & gas is to ensure energy availability for India, minimise dependence on imported crude oil and reduce exposure to vagaries of crude oil prices. Their contribution will

increase India's indigenous production of hydro carbons by over 40 percent in the next 18 months.

Natural gas - a low-carbon, low polluting green fuel that will flow from our fields will create value and be beneficial to a large section of our society. We are building transformational initiatives to promote use of alternative energy.

II. Growth through Innovation

The firm believes that growth through innovation will give it a big competitive advantage and will be a key differentiator. The goal is to make RIL one of the most innovative companies in the world and to achieve breakthrough growth in revenues and profits by creating and implementing sustainable solutions. They are developing an innovative ecosystem that builds on organisational systems and processes, talent management, open innovation and world class R&D facilities.

III. Health and Safety

Safety overrides all production targets – this vision drives us to continuously look for ways to achieve zero accident at workplace. Their vision is to develop a dedicated pool of safety professionals and lead in safety performance across the operations by focusing on process safety and behavioural safety.

IV. Environment

Protecting the environment and preserving natural resources is a high priority area. Through annual environment plan and business targets, projects are identified and action is taken to reduce water consumption and become carbon neutral and achieve maximum possible recycling and reuse of wastes. Targets are set for key environment-related performance indicators such as material intensity, GHG emissions, air quality, water consumption, effluent discharge, waste generation and disposal, and conservation of bio-diversity.

V. Product Responsibility

Product responsibility is to offer efficient and reliable product and services with minimum environmental impact throughout the life cycle of the

product from the cradle to the grave. Products and services are designed, manufactured and delivered with principle consideration of customer safety.

VI. Social Institution Building

Social welfare and community development is at the core of their Corporate Social Responsibility (CSR) philosophy. Firm's strategy is to have close and continuous interaction with the people and communities around its manufacturing divisions to bring qualitative changes and support the underprivileged. The firm contributes in the area of health, education, infrastructure development (drinking water, improving village infrastructure, construction of schools etc.), relief and assistance in the event of a natural disaster and other social initiatives. The aim is to provide comprehensive health services covering preventive, promotive, curative and community health care services.

Strategy Milestones

- Made significant investments in E&P of O&G to secure energy supplies
- Implemented systems to monitor and measure sustainability performance
- Introduced sustainability awareness programmes in the intranet
- Formed the Reliance Innovation Council

Sustainability report assured by an independent assurance provider

Roadmap towards sustainability:

The short-term and long-term plans of achieving excellence in sustainability initiatives are as below:

Long term Plan

- Embed life cycle and systems thinking in all business processes
- Reduce environmental footprint by deploying appropriate systems and technologies
- Move towards a low carbon business enterprise
- Strengthen the talent pool to cater to our diverse and integrated nature of business
- Create a triple bottom-line accounting system

Short-term plan

- Form a sustainability council as an apex body to give impetus to our sustainability strategies
- Identify and develop measurable goals for sustainability performance indicators
- Give a structured approach to our social initiatives
- Create a pan-RIL system for managing organisational knowledge assets with the objective of empowering every employee with connective organisation knowledge for delivering superior performance
- Create a sustainability portal for e-enabling data and information collection

Source: Sustainability Report 2007-08

The Intellectual Property Right (IPR) has been filed in the area of Polypropylene in addition to the assignment of 3 Patent Cooperation Treaty (PCT). 2 Indian trade mark applications for Catalyst System and Process for Polyolefins have also been filed. RIL has been awarded the Arch of Excellence and the Rashtriya Ratan Award during the year for achieving technological excellence.

Human Capital

RIL continues to invest in people through various Learning & Development initiatives, which has seen 3,092,403 man hours of Learning & Development activities at manufacturing divisions. E-learning as a medium is much sought after by the employees for upgrading skills and competencies since people can learn when needed at their own convenience and from where they may be. The Company has continued to invest in this area through newer and state-of-the-art modules both in the Technical and Management domains.

In FY 2009-10, 105 Six Sigma projects were completed leading to financial benefits (annualised) amounting to Rs. 55 crore.

Employee satisfaction is reflected in the stability of senior management, low attrition across various levels and substantially higher productivity.

For sustainability, the talent pipeline is fed by a supply chain of best-in-class nurtured home-grown talent through relevant skill and competency development

programs. Second, hire top talent through concerted efforts from premier technology and management institutions. Third, retain talent by putting in place a performance-oriented Employee Stock Option Plan, the largest in the country. Further, in a collaborative effort, the firm is working with leading educational institutions to help build more robust and industry-oriented programs. In all these endeavors, there is trust placed in youth. This, in turn, brings vigor and dynamism to our organisation. It also sets in a process of creating a new generation of young Reliance leaders.

To serve the Reliance Innovation Council, RIL has set up the Reliance Innovation Leadership Centre in Pune. The mandate of this centre is to implement the innovation agenda of RIL. The innovation agenda hinges around 4 key elements

- Build innovation leaders of today and tomorrow within RIL;
- Deploy best and next transformational innovative practices that will impact the country and the business;
- Develop new business based on emerging and disruptive technology;
- Strategically deploy a corporate venture capital fund to maximize value

The Centre acts as a catalyst in providing leadership and support to the business of RIL by harnessing cutting-edge, futuristic but practical, science, technology and innovation initiatives from both within and outside the organization. It will serve as a Nerve Centre with the sole quest of propelling RIL to the forefront of global business leadership.

Growth through Innovation

Traditionally, Reliance has done very well in process innovation, business model innovation and management innovation. The world has recognized this and applauded it. Early this year, Reliance was ranked 19 amongst the top 50 innovative companies in the world by *Business Week*, a leading US magazine.

The firm believes that growth through innovation will give it a big competitive advantage and will be a key differentiator. The goal is to make RIL one of the most innovative companies in the world and to achieve breakthrough growth in revenues and profits by creating and implementing sustainable solutions. The firm

is developing an innovative ecosystem that builds on organisational systems and processes, talent management, open innovation and world class R&D facilities.

Reliance, in a span of 9 years since inception in the Exploration and Production business, made the largest Gas Discovery in the year 2002 and has since commissioned India's first and one of the World's largest deepwater gas production facilities. Currently Reliance is India's largest gas producer. The first oil discovery was made in the onland exploratory block CB– ONN–2003/1 (CB 10 A&B) in the Cambay basin awarded under the NELP-V round of exploration bidding. RIL holds 100% Participating Interest (PI) in this block. The discovery. named 'Dhirubhai–43' has been notified with the Government of India.

The Company also made its third successive gas discovery in the exploration block KG-DWN-2003/1 (KGV- D3) of NELP-V. This discovery, named 'Dhirubhai–44' has been notified with the Government of India.

Employee cost was Rs. 2,350 crore ($ 523 million) for the year as against Rs. 2,398 crore. The current year figure includes Rs. 20 crore towards expenditure incurred on Voluntary Retirement Scheme/Special Separation Scheme announced for the employees of certain units. Corresponding previous year figure was Rs. 111 crore. The Reliance Technology Group (RTG), created by consolidating various research and technology functions is helping create enhanced value delivery by leveraging all the skills and competencies, and creating new opportunities at the interfaces.

RIL's talent base, as on March 31, 2010, stands at 23,365 with the average employee age of 41 years. The aim is to lower the average employee age and invigorate the youth to take the organisation forward over the next few decades as indeed the current leaders have done over the last 30 years by starting early in their 20s and 30s. The entrepreneurial spirit has been a hallmark of the organisation. The Company continues to nurture this as it grows exponentially.

Reliance's occupational health centers carry out pre-employment and periodic medical checkups as well as other routine preventive services. Specialised tests like biological monitoring, health risk assessment studies and audits for exposure

to various materials are also performed. Health education and awareness form an integral part of the health care programme at Reliance

The firm believes that the safety of each employee is the responsibility of the individual as well as of the whole community of employees.

Business Transformation-HR Transformation:

To quote RIL CMD, Shri Mukesh D. Ambani, 'The Business Transformation initiative that we have embarked upon is singularly going to be the most significant project that Reliance would have ever undertaken in its organisational history'. While this strategy cuts across Manufacturing, Businesses and Services, most of the transformation agenda is around and strongly interlinked with people practices and processes. The mandate is to build a world class HR organisation with benchmark processes and systems around Performance Management, Rewards and Recognition, Competency and Capability Building, Succession Planning, etc. amongst others.

As an ongoing exercise, RIL has continued to look at, identify, create and execute seamlessly, initiatives which enhance productivity and efficiency.

Towards this end, the Company has put into place a central shared services organisation for HR, wherein Global Best Practices for HR Shared Services are integrated. The objective of this centre, apart from leveraging on the economies of scale, is to provide a world class experience to our people on all the matters that they have to deal with on a day-to-day basis including all transactions.

Training, awareness and learning have been always at the forefront of RIL's journey to become world class in environmental performance. To meet this objective, RIL focused on internal and advanced training programmes, inter-site meets, virtual classes, etc. involving subject experts; participation at national and international conferences, workshops and courses as well as networking/collaboration with universities, research institutes, regulatory bodies, industrial and professional associations, etc.

Framework applied to Reliance Industries Ltd

Human Capital		
	Training and development expenses per employee	RIL continues to invest in people through various Learning & Development initiatives, which has seen 3,092,403 man hours of Learning & Development activities at manufacturing divisions. E-learning as a medium is much sought after by the employees for upgrading skills and competencies since people can learn when needed at their own convenience and from where they may be. The Company has continued to invest in this area through newer and state-of-the-art modules both in the Technical and Management domains.
	Benefits from training exercises	In FY 2009-10, 105 Six Sigma projects were completed leading to financial benefits (annualised) amounting to Rs. 55 crore.
	Image of company from employees perspective	Employee satisfaction is reflected in the stability of senior management, low attrition across various levels and substantially higher productivity.
	IP assets	The Intellectual Property Right (IPR) has been filed in the area of Polypropylene in addition to the assignment of 3 Patent Cooperation Treaty (PCT). 2 Indian trade mark applications for Catalyst System and Process for Polyolefins have also been filed. RIL has been awarded the Arch of Excellence and the Rashtriya Ratan Award during the year for achieving technological excellence.
	Knowledge/Skill	For sustainability, the talent pipeline is fed by a supply chain of best-in-class nurtured home-grown talent through relevant skill and competency development programs. Second, hire top talent

		through concerted efforts from premier technology and management institutions. Third, retain talent by putting in place a performance-oriented Employee Stock Option Plan, the largest in the country. Further, in a collaborative effort, the firm is working with leading educational institutions to help build more robust and industry-oriented programs. In all these endeavors, there is trust placed in youth. This, in turn, brings vigor and dynamism to our organisation. It also sets in a process of creating a new generation of young Reliance leaders.
	Innovation Capital	Traditionally, Reliance has done very well in process innovation, business model innovation and management innovation. The world has recognized this and applauded it. Early this year, Reliance was ranked 19 amongst the top 50 innovative companies in the world by *Business Week*, a leading US magazine. To serve the Reliance Innovation Council, RIL has set up the Reliance Innovation Leadership Centre in Pune. The mandate of this centre is to implement the innovation agenda of RIL. The innovation agenda hinges around 4 key elements • Build innovation leaders of today and tomorrow within RIL; • Deploy best and next transformational innovative practices that will impact the country and the business; • Develop new business based on emerging and disruptive technology; • Strategically deploy a corporate venture capital fund to maximize value

		The Centre acts as a catalyst in providing leadership and support to the business of RIL by harnessing cutting-edge, futuristic but practical, science, technology and innovation initiatives from both within and outside the organization. It will serve as a Nerve Centre with the sole quest of propelling RIL to the forefront of global business leadership. Growth through Innovation The firm believes that growth through innovation will give it a big competitive advantage and will be a key differentiator. The goal is to make RIL one of the most innovative companies in the world and to achieve breakthrough growth in revenues and profits by creating and implementing sustainable solutions. The firm is developing an innovative ecosystem that builds on organisational systems and processes, talent management, open innovation and world class R&D facilities.

	Discovery	Reliance, in a span of 9 years since inception in the Exploration and Production business, made the largest Gas Discovery in the year 2002 and has since commissioned India's first and one of the World's largest deepwater gas production facilities. Currently Reliance is India's largest gas producer. The first oil discovery was made in the onland exploratory block CB–ONN–2003/1 (CB 10 A&B) in the Cambay basin awarded under the NELP-V round of exploration bidding. RIL holds 100% Participating Interest (PI) in this block. The discovery, named 'Dhirubhai–43' has been notified with the Government of India. The Company also made its third successive gas discovery in the exploration block KG-DWN-2003/1 (KGV- D3) of NELP-V. This discovery, named 'Dhirubhai–44' has been notified with the Government of India.
	Employees and Employee competence	Employee cost was Rs. 2,350 crore ($ 523 million) for the year as against Rs. 2,398 crore. The current year figure includes Rs. 20 crore towards expenditure incurred on Voluntary Retirement Scheme/Special Separation Scheme announced for the employees of certain units. Corresponding previous year figure was Rs. 111 crore. The Reliance Technology Group (RTG), created by consolidating various research and technology functions is helping create enhanced value delivery by leveraging all the skills and competencies, and creating new opportunities at the interfaces.
	Human resources and Human resource practices	RIL's talent base, as on March 31, 2010, stands at 23,365 with the average employee age of 41 years.

		The aim is to lower the average employee age and invigorate the youth to take the organisation forward over the next few decades as indeed the current leaders have done over the last 30 years by starting early in their 20s and 30s. The entrepreneurial spirit has been a hallmark of the organisation. The Company continues to nurture this as it grows exponentially. Reliance's occupational health centers carry out pre-employment and periodic medical checkups as well as other routine preventive services. Specialised tests like biological monitoring, health risk assessment studies and audits for exposure to various materials are also performed. Health education and awareness form an integral part of the health care programme at Reliance The firm believes that the safety of each employee is the responsibility of the individual as well as of the whole community of employees. Business Transformation-HR Transformation: To quote RIL CMD, Shri Mukesh D. Ambani, 'The Business Transformation initiative that we have embarked upon is singularly going to be the most significant project that Reliance would have ever undertaken in its organisational history'. While this strategy cuts across Manufacturing, Businesses and Services, most of the transformation agenda is around and strongly interlinked with people practices and processes. The mandate is to build a world class HR organisation with benchmark processes and systems around Performance Management,

		Rewards and Recognition, Competency and Capability Building, Succession Planning, etc. amongst others. As an ongoing exercise, RIL has continued to look at, identify, create and execute seamlessly, initiatives which enhance productivity and efficiency. Towards this end, the Company has put into place a central shared services organisation for HR, wherein Global Best Practices for HR Shared Services are integrated. The objective of this centre, apart from leveraging on the economies of scale, is to provide a world class experience to our people on all the matters that they have to deal with on a day-to-day basis including all transactions.
	Training	Training, awareness and learning have been always at the forefront of RIL's journey to become world class in environmental performance. To meet this objective, RIL focused on internal and advanced training programmes, inter-site meets, virtual classes, etc. involving subject experts; participation at national and international conferences, workshops and courses as well as networking/collaboration with universities, research institutes, regulatory bodies, industrial and professional associations, etc.
Structural Capital		
	Number of new product introductions	A series of innovation-led programmes developed by RIL will make its way into the organisation. RIL, through its leadership and talent base is committed to institutionalising innovation in the organisation and will work relentlessly to achieve this ambitious vision.

		In a challenging year of demand destruction and the global financial crisis, RIL was resilient and continued to innovate to convert the adversity into an opportunity. RIL launched an innovative initiative called "Mission Kurukshetra" aimed at galvanising and energising the entire organization to rise to the occasion and help RIL emerge stronger. The focus of this initiative was on extreme efficiency, value maximisation to serve the new market conditions and safety and reliability of assets. The employees responded overwhelmingly by pouring in a record number of ideas over a specially built business excellence tool which operated on the Information Technology (IT) backbone. This initiative not only helped in surmounting the challenges with a will to win, but also identified serial ideators, who were recognised and rewarded by the leadership of RIL. The Leading Expert Access Programme (LEAP) which gives access to global thought leaders continued to inspire the people of RIL. Nobel laureates, industry captains and thought leaders enthralled and enlightened communities with their experiences of life and work.
	R& D expenditure as a percentage of administration	Expenditure on R & D: Rs. Crore a)Capital 187.48 b)Revenue 149.26 c)Total 336.74 d) Total R &D expenditure as a percentage of total turnover is 0.23%
	Research and	The Reliance Research and

	development	Technology Centre (RRTC) is set to be created with a floor space of more than half a million square feet in the central district of Navi Mumbai. The RRTC will act as a hub for the research centers already operating at various manufacturing locations. Reliance intends to create world class physical and intellectual infrastructure in RRTC, with some of the best globally available scientists bolstering its innovation agenda.
	Technology	The Reliance Technology Group (RTG), created by consolidating various research and technology functions is helping create enhanced value delivery by leveraging all the skills and competencies, and creating new opportunities at the interfaces. RTG continues to get external perspectives from members of the Reliance Innovation Council (RIC). Key objectives of RTG are as follows: • Develop fit-for-purpose and sustainable technology and its application. • Provide effective project support and assurance to manufacturing plants and businesses. • Provide technical assurance to projects including technology selection and absorption. • Proactively identify and support technical opportunities to add value across RIL's businesses. • Develop technology strategies suited to create business growth and offset threats. • Balance technology sourcing by a flexible strategy of

		smart buying, fast customisation and flagship development of key technologies. • Exploit synergies cutting across technologies/disciplines. • Improve technical productivity on a continuous basis. • Develop / recruit staff with skills and motivation to meet current and future business needs. • Create a fit-for-purpose process centric organisation. • Ensure long term technical health of RIL businesses. • Manage technology and Intellectual Property (IP) assets for the Company.
	Internal Structure	The Company undergoes internal audit conducted by independent auditors.
	Capital expenses	Reliance's capital expenditure was Rs 19,503 crore (US$ 4,861 million).
	Licences	Character of growth is diversifying from licensing to innovation.
	Franchise	RRL has recently opened its flagship store under its franchise agreement with Hamleys and plans to expand the store network in the coming year.
	Future interests	RIL has also aligned its sustainability activities with the focus areas of The World Business Council for Sustainable Development. Mode of growth is changing from organic to acquisitions. Nature of growth is expanding from manufacturing and services to agriculture and rural. And span of growth is rapidly extending from India to global.
	Culture	Reliance builds with care a workplace that proactively fosters professional as well as personal growth. There is freedom to explore and learn; and there are

		opportunities that inspire initiative and intrinsic motivation. We believe that people must dream to achieve, that these dreams will drive the company's excellence in all its businesses. Reliance thinks, behaves, lives and thrives with a global mindset, encouraging every employee to reach his / her full potential by availing opportunities that arise across the group.
	Strategy	It endeavors to achieve higher standards and provide oversight and guidance to management in strategy implementation and risk management and fulfillment of stated goals and objectives.
	Relational structure	Corporate Social Responsibility (CSR). Social welfare and community development is at the core of RIL's CSR philosophy and this continues to be a top priority for the Company. The CSR teams at the Company's manufacturing divisions interact with the neighbouring community on regular basis. RIL's contributions to the community are in areas of health, education, infrastructure development (drinking water, improving village infrastructure, construction of schools etc.), environment (effluent treatment, tree plantation, treatment of hazardous waste etc.), relief and assistance in the event of a natural disaster and contributions to other social development organizations. RIL also supports and partners with several NGOs in community development and health initiatives.
	External validation	Reliance was recently rated by Boston Consulting Group as the fifth most sustainable value creator globally. Also that Reliance is the only Indian company in the list of top 25 companies in the World.

		This rating was based on tracking of performance over a ten-year period of companies with market capitalization of more than US$ 30 billion
	Corporate Governance	Report on Corporate Governance in Annual Report.
External Capital		
	External structure	Reliance believes that a clean environment in and around the workplace fosters health and prosperity for the individual, the group and the larger community to which they belong. Environmental protection is an integral part of the planning, design, construction, operation and maintenance of all our projects.
	Customers	Its customers have benefited from high quality products delivered at the most competitive prices.
	Reputation of the company	The Company continues to have the highest domestic credit ratings of AAA from CRISIL and Fitch. Moody's and S&P have reaffirmed investment grade ratings for international debt of the Company, as Baa2 and BBB, respectively.
	Investor capital	Sustainable development directly drives value creation. It is an integral part of good process control, product/process innovation, avoidance of liability, and enhancement of an organization's intangible assets. Put simply, the quality of sustainability management can help investors distinguish between companies that are efficient and well positioned to protect their market competitiveness and those that are headed for a bumpy ride. Certain specific factors can help drive a company's value; therefore, their disclosure should be of interest to investors. These factors include a range of different

		competencies and actions. For the investor, the numbers matter. Environmental performance indicators related to resource use and waste generation can support assessments of the cost savings and revenues that are available to, or already realized by, a company that is being scrutinized by potential investors. The trend in performance should also give some indication of the overall ability of the company to manage these issues and capitalize on the opportunities they present. Environmentally driven innovation can create shareholder value by lowering costs, improving production processes and service delivery, and helping to find new markets. Increased process efficiency is an example of a proven sustainability strategy for decreasing costs and adding revenue, thereby improving profitability. Additional opportunities to cut costs and create revenues through increased yield and the sale of waste streams (e.g., scrap and by-products) exist throughout the business value chain, in areas such as product design, manufacturing processes, and use and disposal of materials. Environmentally driven innovation can offer significant benefits and enhance overall competitiveness. Over the longer term, process innovations can also lead to the creation of new products to meet emerging customer needs.
	Stakeholder resources	In terms of distributing wealth to shareholders, apart from having a track record of uninterrupted dividend payout, the firm has also delivered a consistent unmatched shareholder returns since listing.

		What epitomizes the impact of all that we do is the fact that our shareholder base has grown from 52,000 after the IPO to around 3.6 million now.
	Social and green responsibilities	Report on CSR and triple bottom line performance along with details on all social initiatives undertaken by RIL. RIL is set to transform India's energy landscape from the oil & gas flowing from Dhirubhai 1 & 3 Natural gas - a low carbon, low polluting green fuel that will flow from oil fields will create value and be beneficial to a large section of India's society. RIL strives to have a better tomorrow with a cleaner and greener environment. In this regard, RIL launched specialty fibres that use post-consumer bottles and industrial waste for production of pre-coloured products. This segment predominantly caters to production of fibres for specialty defence uniforms. Apart from consuming used bottles, these fibres are also pre-coloured and do not need water for dyeing. RIL has a long and strong tradition of supporting the larger communities that it connects with – from education, health, drinking water, large-scale development of employable skills, to assistance during natural calamities such as earthquakes and cyclones.

5.5 Summary of research analysis

Most of the firms realize that since they hold the largest market capitalization in the Indian economic sector they need to maintain a lot of credibility in the minds of all their stakeholders. This credibility is not built just over the numbers that are reflected in the

Financial statements but needs to be supported with data and documents which further strengthen the image and reputation of the firm in the minds of their stakeholders.

They all use supplementary information which does not follow a common format and is also not regularized. It has been observed that there is a lot of common information that they all talk about but in different ways and using different words.

If a structure is provided then the process of disclosure may become a more systematized exercise and may allow clearer and a more accurate presentation of facts. Intellectual capital exists and is reported by all firms but if it is given a formal structure it may become more clearly visible, measurable, and manageable and reported accurately.

Overall the framework that was used can be considered as a very useful starting point towards developing a model for reporting Intellectual capital in India and this could be developed further and refined further to enhance the accuracy of facts and data reported using this model.

Chapter 6

Summary and Conclusions

6.0 Introduction

This research has been conducted on the Annual reports of the companies for the year 2008-09. The analysis has led to the formulation of 4 caselets of the top 4 companies as per their market capitalization.

6.1 Research Objective

This research aimed to analyze the voluntary disclosures made by the firm to understand whether and how they actually report Intellectual Capital. It was found that top Indian Companies with higher market capitalization do report their Intellectual Capital through supplementary information provided along with their Annual Financial Statements but they do not use the term Intellectual Capital in their Annual reports. These disclosures can be classified under separate headings as the constituents of Intellectual Capital as defined in the framework that has been used to study the annual reports.

6.2 Answers to the proposed Research Questions

Q1. Is the corporate value created by managing Intellectual Capital?

From the literature review it was found that several studies have proven firm's market value and financial performance is positively related to the reporting and managing of Intellectual Capital. Researchers including Stewart, Bontis, Edvinsson and Malone have proven clearly in a number of studies that Intellectual Capital create value and increase shareholders wealth in a firm.

Q2. Is corporate value reported better by reporting its Intellectual Capital?

Several studies point out that annual report users are requesting more and more reliable information related to key drivers of future company value creation capabilities (Maines et al., 2002; Beattie, 2000; Healy and Palepu, 2001; Abeysekera

and Guthrie, 2004). Many companies have responded to this request. Indeed, studies have identified an upward trend in the annual reporting of non-financial information and accounting narratives related to value drivers (Williams, 2001; Abeysekera and Guthrie, 2004; Vandemaele et al., 2005).

Some studies including a survey by McKinsey and Deloitte and research by Edvinsson explain the need for effective Business Reporting and necessitate reporting of Intellectual Capital for better and effective reporting of Intangible assets and Intellectual Capital.

Q3. Do Indian Companies with higher market capitalization report their Intellectual Capital?

It was found that Indian Companies report their Intellectual Capital without using this term. They report their Intangible assets using a few commonly used terms and a few terms which are specific to their area of operations. The caselets have been developed to identify all the terms and elements that the companies have used in reporting their intangible assets and which are not directly related to their Annual Financial Statements.

Q4. What are the elements through which Indian Companies report their Intellectual Capital ?

A framework with 3 components of Intellectual capital and a total of 30 elements within the three components can be used to understand reporting of Intellectual Capital. These elements have been identified using the past researches and have been proven to be reliable and valid to be used to report and manage Intellectual Capital in Indian companies. The reports content have been analyzed using the summative and directed content analysis. It was found that the words by the companies and in the model are same in most of the elements but wherever they were not the same the principle of semiotics was applied and synonyms were searched to understand if the words that were discussed using different words to convey the same meaning. It was found that most of the elements that were used by the model were being used to report

Intellectual Capital in Indian companies.

Q5. Can a standardized model be used by Indian companies to report Intellectual Capital?

After analyzing the reports and comparing the caselets with each other using a common framework, it can be concluded that a standardized model – the framework can be used to report Intellectual Capital in India as the elements are applicable to the 4 companies in India that were drawn as a sample from different sectors and industries.

6.3 Summative observations on the research

The detailed analysis of the reports revealed that the companies report and disclose a lot of information about their activities beyond their annual financial statements in their annual reports. These activities are not directly related to the activities that have been accounted for in the Annual Financial Statements. These activities have an impact in the minds of the investors which allows them to place a lot of their trust in the companies. Historically these activities have been used to build a strong reputation in the minds of the investors and this reputation is valued as Goodwill which is amortized rather than capitalized.

Recently the emphasis of these disclosures is on creation of value and sustainability keeping in view the recent recessions. Thus the reports nowadays have elements on sustainability and sustenance.

Besides sustainability since there is a growing awareness of the environmental impact of business and there is a focus on the environment protection activities undertaken by these firms. The other most significant aspect of reporting that the firms focus on is the contribution to education at all levels.

For a detailed analysis what exactly these firms have talked about four case-lets have been developed in order to study the exact form and nature of reporting and managing Intellectual Capital in Indian companies. The framework has been used successfully to decipher reporting on Intellectual Capital by these 4 companies. These companies match each other a lot across the elements used in the framework.

6.4 Limitations of this Research

The biggest limitation was the number of case studies conducted. But since the focus was more on development of the framework the firms were chosen being the most trusted names. It was assumed that their reports would be the most descriptive and comprehensive in nature but there may be other firms who may report their Intangibles much more explicitly but they may not be very high in their market capitalization. Because of the firms being all large cap firms the research may not be entirely reliable for small cap and mid cap firms unless a few more case studies in that range of market capitalization are conducted. Inclusion of greater number of cases could change results but would need a lot more time and subsequent research.

6.5 Scope for Future Research

A detailed extended study using this framework could help improvise the framework by using terms which are more Indian audience friendly and more clear and accurate in their expectation in terms of reporting. The literature review covered during this research is very exhaustive so future researchers need to just use this framework and try and improvise it or extend it further to be customized to Indian corporate reporting and stakeholders familiarity. The researchers would rather need to further try and attach variables to the given elements so that they could be used as a more descriptive tool for corporate valuation using Intellectual Capital reporting.

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